THE FINAL STAGE OF THE EARLY BRONZE AGE IN SOUTH-EASTERN OF TRANSYLVANIA (in the light of new excavations at Zoltan)

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The end of the Early Bronze Age (EBA) in Central and South-Eastern Europe was marked by the spread of several archaeological cultures and groups characterised by *"Besenstrich"* and, to a lesser extent, *"Textilmuster"* pottery. This kind of pottery appeared the first time in Central Europe: *Makó, Nyirség* cultures etc.[1] and then, in Romanian Banat and Oltenia: *Gornea-Orleşti* group[2], in Wallachia: *Bungetu* type[3] considered as marking the earliest stage of the *Tei* culture[4], but also in Transylvania: *Iernut* group, which until recently only was distributed in the south-western and central part of this province[5]. As concerns Eastern Transylvania, one should mention some potsherds with "Besenstrich" from Simoneşti[6] and Cristuru Secuiesc[7], as well as pottery with "Textilmuster" (Ciomortan)[8], discovered out of sure archaeological context.

The new excavations at *Zoltan*[9] extend the distribution area of the "Besenstrich- und Textilmuster" pottery in the EBA up to the Southwestern arch of the Oriental Carpathians. All artefacts belonging to the above mentioned cultural phenomenon discovered at Zoltan seem to be the most representative for Transylvania. Therefore although the excavations are not finished and not all aspects of the archaeological situation are clear yet, I consider it however useful to present here the first results of the EBA excavations at Zoltan, as far as the present stage of research allows it.

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The settlement at Zoltan is situated on the high terrace of the Olt river, about 500 m. east of its actual river bed, north of the village Zoltan (Fig. 1) and about 8 km. north-east from the city of Sfântu Gheorghe (Covasna district)[10].

The archaeological materials belonging to EBA are spread on a surface of about 300 x 500 m. During the 1996-1997 campaigns three trenches were excavated in the southern part of the settlement: trench A - 55 sq. m.; trench B - 608 sq. m. and trench C - 32 sq. m. (Fig. 2).

The most representative EBA materials were discovered in trench B (Fig. 3): a poor cultural layer and one large complex *(complex No. 1).* EBA artefacts were discovered in the cultural layer, mainly in the northern half of the excavated part, above, near and inside the *complex No. 1.* This complex consists of a long pit (ca. 25 x 6-9 m. and more than 2 m. deep) dug in the sandy yellowish soil and of the ruins of a stone construction surrounding the northern half of the pit. Alongside, north and east of its margin, a lot of pillar and stake pits were grasped. During the destruction of the stone construction a part of the boulders fell into the pit, others at the surface near by.

In the Middle and Late Bronze Ages this complex was partly covered and perforated by successive layers and pits containing *Ciomortan, Tei, Monteoru, Wietenberg* and *Noua* pottery (Fig. 3 a; Fig. 4).

In 1996-1997 *complex No. 1* has been only partially investigated: the ruins of the stone construction were cleared and about a third of the pit was emptied (C, D/ 7-16, E, F, G/ 11-16). The filling of the pit belonging to *complex No. 1* consisted of gray sandy soil. Between the boulders and within the pit were found tools, cult objects, pottery, burnt clay fragments, animal bones (300 fragments) and shells (21 fragments).

Tools

Bone *percutor* (Fig. 5/8), bone "chisel" (Fig. 5/9), burnt clay spindle head (Fig. 6/10), burnt clay so-called reel (Fig. 5/11).

Cult objects

- The fragment of a burnt clay zoomorphic statuette with its left half missing (Fig. 5/2), which probably represents a bull. Two circumstances should be men-

tioned: its lop-sided position - if reconstructed it would fall on its right side -, and its obvious expression of the traction effort. This suggests that the fragment belongs to a couple of bulls harnessed to a wagon (?);

- Five fragments of a burnt clay miniature wheels (Fig. 5/1);
- Three fragments of a burnt clay miniature axes (Fig. 5/3,7). A similar intact axe was found in the cultural layer above the pit (Fig. 5/5);
- The cylindrical fragment of a burnt clay statuette (?) with a finger impression in its narrow part (Fig. 5/4);
- The fragment of a burnt clay cylindrical object with rounded end (Fig. 5/6).

Pottery

In the investigated part of *complex No. 1* 4.343[11] potsherds were found.

This pottery can be classified into three categories: coarse (3.208 fragments, 73,9%), semifine (744 fragments, 17,1%) and fine ones (391 fragments, 9%).

Coarse pottery is characterised by a paste containing sand, gravel, ground ceramics and, rarely, pounded shell[12] (54 sherds, 1,68% of the coarse and 1,24% of all pottery). As a rule, pottery of this category is characterised by rough external and more or less smooth internal surfaces. As concerns the firing, its colour is not uniform and varies from yellow to black, with the red-brownish colour clearly prevailing. Regarding the shapes, it should be remarked that the overwhelming majority of the coarse pottery is very fragmented. Only one pot could be more or less completely reconstructed: a sack-shaped vessel (Fig. 9/1). As suggested by the upper parts of the vessels, the following shapes can be distinguished:

- Bowls - vessels with a wide-opened mouth, slightly curved wall and vertical rim (Fig. 7/1-4; 10/1-3; Pl. 1/10);
- Sack-shaped vessels with slightly profiled body (Fig. 9/1; 8/1-3; Pl. 1/8);
- Vessels with a wide-opened mouth and slightly everted rim (Fig. 8/4);
- Pot-bellied vessels with slow shoulder and short everted rim (Fig. 9/5,7; Pl. 1/11);
- Vessels with growing narrow upper part and with vertical rim (Fig. 8/7; Pl. 1/1);
- Dish with short everted rim (Fig. 9/6);
- Colanders (Fig. 9/2-3);
- Vessels with cylindrical- or slightly tronconic-shaped upper part, vertical walls and everted thickened rim (Fig. 10/6-7; 8/8; Pl. 1/4).

A lot of the coarse pottery is decorated (1409 sherds, 44% of all coarse pottery). The ornaments imply the following decoration techniques: I - plastic, II - "Besenstrich", III - "Textilmuster", IV - painting, V - nail impression, VI - finger impression, VII - pricking, VIII - grooving.

I. Plastic decoration

Using this technique, 141 potsherds (10% of the decorated pottery) are ornamented. There are three kinds of horizontal bands, placed on the rim, under the rim, or in a single case around the bottom: - simple (Fig. 8/9), - incised (8/1; 9/1,7), - finger impressed one (Fig. 7/3,4; 8/2-4,7,9; Pl. 1/10); and applications of three kinds: - round (Fig. 6/5), - oval simple (Fig. 10/4), - oval finger impressed one (Fig. 6/8; 8/6; 10/2).

II. "Besenstrich" decoration

The overwhelming majority of the ornamented pottery (1170 sherds, 65,4% of the total ornamented coarse pottery) are decorated in such a way. As a rule, the outside of the body is decorated (Fig. 6/1-5; 7/1-4; 8/2-7; 9/5,7; 10/1-6; Pl. 1), and only rarely the inner one too (Fig. 6/6,7).

III. "Textilmuster" decoration

13 sherds (Fig. 11/1-5) show this technique (0,92% of the ornamented coarse pottery). Only in the case of a single sherd both techniques have been used together: "Besenstrich" and "Textilmuster" (Fig. 11/6; Pl. 1/9).

IV. Painted decoration

A single sherd shows a painted ornament. It has "Besenstrich" on its outer surface, over which a little section of painted slip is preserved. As far as it can be traced out of this preserved section, the painted ornament consisted of vertical-oblique lines, among which the circular point is placed. This decoration was done by a kind of white paint (Fig. 12/3; Pl. 1/2)[13].

V. Nail impressions

This kind of decoration consists of a horizontal row of nail impressions placed on the rim - 37 potsherds (Fig. 10/2), or on the body - 6 potsherds.

VI. Finger impressed ornament

This technique was used on a total of 156 fragments (8,7%) in order to decorate bands - 96 potsherds and upper outer side of rims (Fig. 7/2,3) - 59 potsherds.

VII. Pricked ornament

Horizontal rows made in this manner, are placed under or on the rim. In accordance with the shape of the tool used for decoration, there are two variants of pricked traces: - point-shaped - 1 sherd; - a kind of "rosette" which seems to be made by pricking with a bone or wooden object with five pointed tips - 1 sherd (Fig. 11/1).

VIII. Grooved ornament

This technique of decoration was done by grooving with a bone or wooden object with a rounded tip. Arched lines are made by the use of this technique - 3 potsherds.

For associations and statistics of different techniques of decoration see Tab. 1.

Semifine pottery contains sand and grounded ceramics in the paste. This category of pottery is characterised by smooth surfaces. As far as it can be observed, the majority of sherds belongs to smaler vessels than the coarse ones. The colour of the sherds varies from yellow to black, the majority of fragments being of red-brown colour.

The following shapes can be mentioned in this category:

- sack-shaped;
- cylinder-shaped pots;
- bowls;
- lids. Four types can be distinguished: cylinder-shaped (Fig. 13/2), cone-shaped (Fig. 13/3; Pl. 2/3), cone-shaped with a disc-shaped top and a little handle (Fig. 13/4), semisphere-shaped (Fig. 13/1).

Ornaments

27 sherds (3,6%) of the semifine pottery are ornamented. They are decorated using six techniques: plastic, pricking, grooving, incision, "Besenstrich" and cord impression.

Plastic technique

2 sherds are in this way ornamented. They show bands placed under the rim. One fragment has a simple band while another a pricked one by a kind of tool with a rectangular tip (Fig. 14/11).

"Besenstrich" technique

It is represented by 11 fragments. It should be mentioned that sometimes only the inferior part of the vessels is decorated, while the superior part, having a smooth surface, shows no ornaments. There are two variants: - oblique parallel lines (Fig. 12/1; Pl. 2/6); - oblique lines straightened in opposite directions (Fig. 12/2).

Pricked decoration

1 potsherd is decorated by pricking combined with grooving. It is ornamented by two horizontal grooved lines, above which a horizontal placed row of pricked lens - like points is added (Fig. 15/12).

Grooved decoration

9 sherds show grooved ornaments. Four variants of ornaments are executed in this technique:

- the horizontal line under which a lot of vertical parallel lines are placed - 1 sherd (Fig. 15/6; Pl. 2/5);
- three parallel arched lines - 4 sherds;
- three parallel horizontal lines placed outside under the rim of a bowl - 2 sherds;
- the same ornament placed inside under the rim - 1 sherd.

Incised decoration

1 potsherd is ornamented by pricking combined with incision. It is a fragment of the upper part of a pot, which has under its rim a horizontally placed row of pricked points, and under this row another point is surrounded by a "wavy"-line made by two incised parallel lines (Fig. 11/7).

2 sherds are ornamented by oblique and vertical incision placed at a rim.

Corded decoration

1 fragment is ornamented by cord impression (Fig. 11/8).

For associations and statistics of different techniques of decoration see Tab. 2.

Fine pottery contains very small, sometimes invisible ingredients in the paste. The surfaces of the sherds are well smoothed and frequently polished. The overwhelming majority of the sherds belong to smaller containers compared to the previous categories. The colours vary from yellow to black, but the preponderant colour of the

sherds is black. With regards to the shapes, dishes (Fig. 14/4,5), cups (Fig. 14/1-3), juglets (Fig. 14/6-9), fruitstands (Fig. 14/12) and tumblers (Fig. 15/8-10) can be distinguished.

Only 15 potsherds (4,1%) of the fine pottery are decorated. There are five kinds of decoration: plastic, by pricks, grooving, impression and incision.

There are two variants how the plastic decoration looks like: a) a lens-like application (Fig. 14/14) - 1 sherd and b) a band with a row of lens-like pricks (Fig. 15/1) - 1 sherd.

Pricked ornaments, in form of rows of pricks are horizontally placed on the upper end of containers under their rim, on the shoulders, or vertically on both lateral sides of the small handle (Fig. 15/5; Pl. 2/8). There are five variants of this kind of decoration: a) circular pricks (Fig. 15/5; Pl. 2/8) - 1 sherd, b) oblique lens-like pricks - 1 sherd, c) vertical lens-like pricks (Fig. 15/4) - 1 sherd, d) horizontal lens-like pricks (Fig. 15/3) - 1 sherd, e) semicircular pricks (Fig. 15/2) - 1 sherd.

2 sherds belonging to little juglets are incised and show also pricks. In both cases the ornaments are placed on the shoulder. In the first case one made a horizontally placed incised row of triangles with downwards straightened tops; the inside of the triangles is filled with a lot of pricked points (Fig. 14/13; Pl. 2/1). In the second case, we see an incised horizontally placed zigzag-band, under which a horizontally row of pricked points is placed; the triangles formed in this way are filled by oblique parallel lines. The tops of the zigzags are marked by pricked points. Between sections of zigzag-bands made by pricked points, an arcade and a vertical line starting upwards from its top are made (Fig. 14/8; Pl. 2/2).

The inner side of a small dish rim is decorated by an impressed horizontal row of small triangles, (Fig. 15/7) - 1 sherd.

1 fragment of a juglet is decorated by impressions and incision. On its shoulder, by excision, a horizontal row of small triangles with their tops straightened upward is made, under which, the incised triple zigzag is traced (Fig. 14/10; Pl. 2/2, 7).

3 potsherds are decorated by grooving. There are three variants: a) a lot of vertical parallel lines placed at the most prominent part of the juglet body - 1 sherd, b) multiple horizontal parallel lines placed on the neck of the juglet - 1 sherd, c) a horizontal line placed under the rim of juglet (Fig. 15/15; Pl. 2/4) - 1 sherd.

For the statistics and associations of different ornaments see Tab. 3.

Some conclusions.

Two matters can be approached here.

According to the first one, in the same complex, the pottery with pounded shell fabric (Fig. 16) was found together with "Besenstrich- und Textilmuster" pottery. In Eastern Europe such pottery is considered as marking the middle and late periods of the Ariuşd-Cucuteni-Tripolje cultural unit[14] the *Cernavoda I*[15], the *Cernavoda III*[16] and *Coţofeni*[17] cultures. Therefore, the question is: does the pottery with pounded shell in paste from Zoltan belong to "Besenstrich- und Textilmuster" horizon? Or is it connected with another horizon, belonging to the Aeneolithic, Transition period, or the beginning of the EBA?

As for the possibility of the belonging of this pottery to the "Besenstrich- und Textilmuster" horizon, it should be firstly stressed that complex No. 1 is not a closed complex because, beside EBA pottery, just a few *Ariuşd* type potsherds were found in its filling; secondly, that the pottery from Zoltan with pounded shell in the fabric is never ornamented by "Besenstrich" or "Textilmuster" technique; thirdly, that it has never been found anywhere in such a context. On the other hand, it should be mentioned the presence of this kind of pottery at Sărata Monteoru, in the *Monteoru IC4* level [18].

Concerning the possibility of associating this pottery to the *Cucuteni-Ariuşd-Tripolje* cultural unit, it should be noted that in this unit the already mentioned category of pottery is represented, as a rule, excepting for Usatovo group[19], in a significantly lesser proportion compared to the amount of smooth yellow-red pottery, than at Zoltan.

As for the possibility of *Cernavoda I* or *III* influences, according to recent opinions on the chronological and cultural connections in this part of Europe, such contingency in Southeastern Transylvania could be possible, excepting *Latest Ariuşd,* only in *Tiszapolgár, Bodrogkeresztúr* or *Coţofeni* context[20] (Tab. 2). None of the elements of the above mentioned cultures has been found at Zoltan, yet.

The above mentioned considerations determine me to postpone any final answer regarding the cultural affiliation of the pottery with pounded shell in paste from Zoltan. Future excavations will lead, I hope, to the discovery of a more clear context for this kind of pottery.

The second matter refers to the cultural affiliation and the chronological position of the "Besenstrich- und Textilmuster" horizon from Zoltan. For the end of EBA in Transylvania has been recently distinguished the *Iernut group*[21]. In my opinion, at the present stage of research, this group, due to the poverty of its documentation, does not offer sufficient data for a more precise definition. On the other hand, its affiliation to the large cultural area of the "Besenstrich und Textilmuster" pottery and its dating in Transylvania in *post-Schneckenberg and pre-Wietenberg period* is obvious. The corresponding groups from Banat, Oltenia and Wallachia aren't defined any better. That is why it would be premature to give more precise details concerning the cultural affiliation of the Zoltan EBA discoveries.

The *chronological position* of the "Besenstrich- und Textilmuster" horizon from Zoltan. Concerning its relation with previous cultures from Eastern Transylvania (for the present state of research), it seems to be dated *soon after* the end of the *Jigodin* and *Schneckenberg* cultures. In this respect, the corded sherd from Zoltan (Fig. 11/8), the presence of the *"Besenstrich"* pottery in the *Schneckenberg* (B?) culture settlements (for example: *Copşa Mică*[22] and in the *Jigodin* culture[23], as well as some close analogies between the *Jigodin* type pottery from *Leliceni* and the pottery from Zoltan have to be taken into account[24].

Concerning the relation of the EBA horizon with the later cultures from the East and South-East Carpathian area, it should be taken into account the presence in the layer covering the complex No. 1 of the pottery which can be compared with the *Ciomortan* (Fig. 18/1; Pl. 3/1) and *Tei* (*Ib = Căţelu Nou,* after V. Leahu) cultures pottery (Fig. 18/2; 19/1-7; 20/2, 4-6; Pl. 3/5-7), as well as with the pottery of the Wietenberg (?)[25] type (Fig. 20/1). At the Ciomortan site together with the *Ciomortan* type pottery some sherds of the *Monteoru IC3* type were found[26]. The *Costişa* culture, which is considered contemporary and closely related with the *Ciomortan* group[27], is synchronised, according to A.Vulpe, to the Monteoru *IC3* and the beginning of the *Monteoru IC2*[28]. Although an unanimously accepted point of view about the chronology of the *Tei* culture does not exist, it should be mentioned the possible synchronism *Tei Ia = Monteoru IC3*[29]. Under such conditions, the "Besenstrich- und Textilmuster" horizon from Zoltan, which is undoubtedly later than the *Schneckenberg* culture, must be synchronised either with the earliest part of the *Monteoru IC3,* or even with the *Monteoru IC4.* Such a dating contradicts the wide spread point of view, according to which the Schneckenberg culture is contemporary with the *Monteoru IC4* and even with *IC3*[30]. In this respect, it should be specified that the Schneckenberg pottery from the Sărata Monteoru site and the *Monteoru IC4-IC3* pottery from the Sfântu Gheorghe-Örko site were found in uncertain stratigraphic conditions (out of closed complexes), but the potsherd found in the grave from Sfântu Gheorghe-Örko[31] was wrongly assigned to the *Monteoru IC3 - IC4*[32]; in fact it undoubtedly belongs to the Schneckenberg culture. Therefore, one must put a question: to what extend the synchronism *Schneckenberg - Monteoru IC4 -IC3* is justified?

Future excavations at Zoltan, I hope, will offer more clear data concerning the relative chronology of the EBA and MBA cultures in the Eastern Carpathian area.

Notes

1 Mozsolics 1952; Csalog 1952; Kalicz 1967; Kalicz 1968; Banner and Bóna 1974; Schalk 1981; Kalicz 1988 a; Kalicz 1988 b; Kalicz 1988 c; Roman 1988; Koós 1991 etc.

2 Boroneanţ 1971; Lazarovici 1977, 89-90, Pl. LXVII; Lazarovici and Săcărin 1979; Roman 1988; Roman 1993, 17, 26, 31-32, 46, 56, 63-64; Gogâltan 1993; Govora 1995, 38-41, Fig. 1-10; Gogâltan 1995, 57-58, 67-78; Gogâltan 1996; Gumă 1997, 26-36, 176-189, 191, 194-196 etc.

3 Chicideanu 1977

4 Chicideanu 1977; Leahu 1995.

5 Rotea 1993, 66, Fig. 1, 83, Pl. XIV, 84; Ciugudean 1996, 110-112, 152, Fig. 85.

6 Benkö 1992, tab. 3/11,13,14.

7 Benkö 1992, tab. 3/12.

8 Unpublished. Information from Székely Zsolt.

9 Cavruc and Cavruc 1997 a; Cavruc and Cavruc 1997 b.

10 The first excavations were carried out here by Székely Zoltán, during the 1970's (Székely 1977).

11 To this number should be added 12 smooth yellow-red *Ariuşd* type potsherds.

12 It is quite possible that this pottery does not belong to EBA. See bellow.

13 According to my knowledge, painted pottery has never been found untill now in the "Besenstrich- und Textilemuster" pottery context.

14 Dumitrescu 1972; Černyš 1982, Movša 1985 a, 209, 215, 218, 220, 222; Movša 1985 b, 228, 231, 234-235, 237, 239-240,

243, 245-246, 248, 251; 206; Enciclopedia I 1994, 386; Dragomir 1996, 16-19, 90-91.
15 Enciclopedia I 1994, 291; Cavruc and Neagu 1995, 72; Munteanu 1995, 59-60 etc.
16 Enciclopedia I 1994, 291 etc.
17 Roman 1976, 19.
18 Taking into account that immediately under the Monteoru IC4 level at Sărata Monteoru there is an aeneolithic stratum (Zaharia 1990, 24, Fig. 1; 1991, 63, Fig. 1, Fig. 2; 1993, 16, Fig. 2) it might be quite possible that this pottery belongs to the *Cucuteni B* or *Cernavoda I* culture.
19 Movša 1985 b, 251.
20 Roman 1976, 60, Fig. 9; Bankoff and Winter 1990, 186.
21 Rotea 1993; Ciugudean 1996, 110 -112, 152, 281-282.
22 Blăjan 1996, 153, Fig. 3/2 -4.
23 Roman 1973; Roman 1992, Taf. X/8, 11; Taf. 82/7; Taf. 117/15.
24 Compare Fig. 10/2 in this article with: Roman 1992, Taf. VI, 23; Taf. 82/7; 120/11;120/18, and so on.
25 In the preliminary report (Cavruc and Cavruc 1997b, 160) this pottery was considered as one belonging to the early Wietenberg (Wietenberg 1?). This supposition seems to be premature, taking into account the complexity of the discussion concerning the beginning of the Wietenberg culture (Chidioşan 1980; Boroffka 1994; Rotea 1994 etc.).
26 Zaharia 1995, 152-153.
27 Vulpe 1995, 164/165; Zaharia 1995 a, 192/200.
28 Vulpe 1995, 165-66.
29 Chicideanu 1977, 237; Leahu 1992, 66.
30 Székely 1970, 205; Zaharia 1987; Zaharia 1990, 34-35; Zaharia 1995 a, 192/200; Boroffka 1994, Teil 1, 258, Tab. 14; Boroffka 1995, 291 etc.
31 Székely 1970, Fig. 3/1.
32 Székely 1970, 205.

LITERATURE:

Bankoff and Winter 1990 — H. Arthur Bankoff and Frederik A. Winter: *The Later Aeneolithic in South-eastern Europe,* AJA, 94, 1990, 175-191.

Banner and Bóna 1974 — J. Banner and I. Bóna, *Mittelbronzezeitliche Tell Siedlung bei Bekes,* Budapest, 1974.

Bátora 1981 — J. Bátora, *Die Anfänge der Bronzezeit in der Ostslowakei,* SlovArch, 29, 1981, 7-16.

Blăjan 1996 — M. Blăjan, *Aşezări din cultura Schneckenberg descoperite la Copşa Mică (jud. Sibiu),* AMN, 33, I, 1996, 145-154.

Boroffka 1994 — N. G. O. Boroffka, *Die Wietenberg-Kultur,* I-II, Bonn, 1994.

Boroffka 1995 — N. G. O. Boroffka, *Chronological table.* In: *Treasures of the Bronze Age in Romania,* Bucharest, 1995, 291.

Boroneanţ 1971 — V. Boroneanţ, *Gornea-Vodneac, un nou aspect al epocii bronzului descoperit în zona Porţilor de Fier,* RevMuz, 8, 1971, 5 -12.

Benkö 1992 — Benkö Elek, *A középkori Keresztúrszék régészeti topográfiája,* Budapest, 1992.

Cavruc and Cavruc 1997 a — V. Cavruc and Galina Cavruc, *Zoltan, Com. Ghidfalău, jud. Covasna. In: Cronica cercetărilor arheologice. Campania 1996,* Bucharest, 1997, 80-81.

Cavruc and Cavruc 1997 b — V. Cavruc and Galina Cavruc, *Aşezarea din epoca bronzului timpuriu de la Zoltan,* Angustia, 2, 1997, 157-172.

Cavruc and Neagu 1995 — V. Cavruc and M. Neagu, *Date noi privind stratigrafia Grădiştei Coslogeni,* CCDJ, XIII-XIV, 1995, 71-80.

Csalog 1952 — Csalog J., *Die Ausgrabungen in Toszeg im Jahre 1948,* ActaArch, II, Budapest, 1952, 20-33.

Černyš 1982 — E. K. Černyš, *Eneolit Pravoberežnoj Ukrainy i Moldavii.* In: *Eneolit SSSR,* Moskva, 1982, 165-304.

Chicideanu 1977 — I. Chicideanu, *Date noi privind începutul culturii Tei (Săpăturile de la Brăteşti Bungetu),* SCIVA, 28, 2, 1977, 225-238.

Chidioşan 1980 — N. Chidioşan, *Contribuţii la istoria tracilor din nord-vestul României. Aşezarea Wietenberg de la Derşida,* Oradea, 1980.

Ciugudean 1996 H. Ciugudean, *Epoca timpurie a bronzului în centrul și sud-vestul Transilvaniei*, Bibliotheca Thracologica XIII, București, 1996.

Dragomir 1995 Ion T. Dragomir, *Monografia arheologică a Moldovei de Sud*, 1, Danubius, XVI, Galați, 1996.

Dumitrescu 1973 Vl. Dumitrescu, *Einige Fragen zur Cucuteni-Kultur im Lichte der Ausgrabungen bei Drăgușeni (NO der Moldau, SR Rumänien)*, ZfA, 1973, 2, 178-196.

Enciclopedia I 1994 ENCICLOPEDIA I, 1994, *Enciclopedia arheologiei și istoriei vechi a României*, Vol. I, București, 1994.

Gogâltan 1993 Fl. Gogâltan, *Foieni, eine frühbronzezeitliche Siedlung aus dem Südwesten Rumäniens. Vorläufiger Bericht*, Thraco-Dacica, XIV, 1-2, 1993, 51-64.

Gogâltan 1995 Fl. Gogâltan, *Die Frühe Bronzezeit im Südwesten Rumänien Stand der Forschung*, Thraco-Dacica, XVI, 1-2, 1995, 55-79.

Gogâltan 1996 Fl. Gogâltan, *About the Early Bronze Age in the Romanian Banat*. In: *The Yugoslav Danube Basin and the Neighbouring Regions in the 2nd Millennium B.C.*, Belgrad-Vršac, 1996, 43-51, T. V-XIV, Maps I-III.

Govora 1995 Pr. Gh. Govora, *O preistorie a Nord-Estului Olteniei*, Rm. Vâlcea, 1995.

Gumă 1997 M. Gumă, *Epoca bronzului în Banat/The Bronze Age in Banat*, Timișoara, 1997.

Kalicz 1967 Kalicz Nandor, *A korabronzkori Nyírségi csoport telepe Myírpazony hátarában*, ArchÉrt, 94, 1967, 3-19.

Kalicz 1968 Kalicz Nandor, *Die Frühbronzezeit in Nordostungarn*, Budapest, 1968.

Kalicz 1984 a Kalicz Nandor, *Die Makó-Kultur*. In: *Kulturen der Frühbronzezeit des Karpatenbeckens und Nordbalkans*, Beograd, 1984, 93 -103.

Kalicz 1984 b Kalicz Nandor, *Die Nyirség-Kultur*. In: *Kulturen der Frühbronzezeit des Karpatenbeckens und Nordbalkans*, Beograd, 1984, 109-119.

Kalicz 1984 c Kalicz Nandor, *Die Hatvan-Kultur*. In: *Kulturen der Frühbronzezeit des Karpatenbeckens und Nordbalkans*, Beograd, 1984, 191-206.

Koós 1991 S. Koós Judit, *Kora vbronzkori településnyomok Mezöcsát-Oroszdombon.* Különlenyomat a Herman Ottó muzeum, Évkönyve XXVIII-XXIX, Kötetéböol, 1991, 5-17.

Lazarovici 1977 Gh. Lazarovici, *Gornea. Preistorie*, Reșița, 1977.

Lazarovici 1997 Gh. Lazarovici, *About the Early Bronze from Transylvania*, Angustia, 2, 1997, 9-36.

Lazarovici and Săcărin 1979 Gh. Lazarovici and C. Săcărin, *Epoca bronzului în "Clisura Dunării"*, Banatica, 1979, 71-105.

Leahu 1963 V. Leahu, *O fază veche a culturii Tei descoperită la Cățelu Nou*, SCIV, XIV, 2, 1963, 309-321.

Leahu 1992 V. Leahu, *Date și considerații noi cu privire la periodizarea culturii Tei*, CercArh, IX, 1992, 62-72.

Movša 1985 a T. G. Movša, *Srednij etap tripol'skoj kul'tury*. In: *Arheologija Ukrainskoj SSR*, 206-223.

Movša 1985 b T. G. Movša, *Pozdnij etap tripol'skoj kul'tury*. In: *Arheologija Ukrainskoj SSR*, 223-263.

Mozsolics 1952 A. Mozsolics, *Die Ausgrabungen in Toszeg im Jahre 1948*, ActaArch, II, Budapest, 1952, 35-69.

Munteanu 1995 M. Munteanu, *Urme materiale ale culturii Cernavoda I din punctul "Ferma 7 IAS Roșeți" (jud. Călărași)*, Cercetări arheologice în aria nord-tracă, I, 1995, 59-61.

Roman 1976 P. I. Roman, *Cultura Coțofeni*, București, 1976.

Roman 1988 P. Roman, *Ostrovul Corbului (Rumänien und Malé Kosihy (Tschechoslowakei)*, SlovArch, XXXVI 1, 1988, 217-225.

Roman 1996 P. Roman, *Istoricul cercetării. Săpăturile arheologice și stratigrafia/ Forschungsgeschichte. Ausgrabungen und Stratigraphie*. In: *Ostrovul Corbului, I. 1. a*, București/Bukarest, 1996, 1-114.

Roman et alii 1973 P. I. Roman, János Pál and Horvath Csába, *Cultura Jigodin. O cultură cu ceramică șnurată în estul Transilvaniei*, SCIVA, 24, 1973, 559-574, Pl. 6-9.

Roman et alii 1992 — P. I. Roman, Ann Dodd-Opriţescu and Pál János, *Beiträge zur Problematik der schnurverzierten Keramik Südosteuropas*, Mainz, 1992.

Rotea 1993 — M. Rotea, *Contribuţii privind bronzul timpuriu în centrul Transilvaniei*, Thraco-Dacica, XIV, 1-2, 1993, 65-86.

Rotea 1994 — M. Rotea, *Contribuţia cercetărilor de la Suatu "Fâneaţa de Jos" (1991-1993) la cunoaşterea etapelor timpurii ale evoluţiei culturii Wietenberg*, AMN, 31, I, 1994.

Schalk 1981 — Emily Schalk, *Die Frühbronzezeitliche Tellsiedlung bei Toszeg, Ostungarn, mit Fundmaterial aus der Sammlung Groningen (Niederlande) und Cambridge (Grossbritanien)*, Dacia, N. S., XXV, 1981, 63-129.

Székely 1970 — Székely Zoltán, *Contribuţie la cunoaşterea prelucrării metalelor la începutul epocii bronzului în sud-estul Transilvaniei*, SCIV, 21, 1970, 201-208.

Székely 1970 a — Székely Zoltán, *Cultura Ciomortan*, Aluta, II, 1970, 71-76.

Székely 1977 — Székely Zoltán, *Contribuţii privind epoca bronzului în sud-estul Transilvaniei*, Aluta, VIII-IX, 1976-1977, 25-36.

Vulpe 1961 — A. Vulpe, *K voprosu o periodizacii bronzovogo veka v Moldove*, Dacia, N.S., 5, 1961, 105-122.

Vulpe and Zamoşteanu 1962 — A. Vulpe and M. Zamoşteanu, *Săpăturile de la Costişa*, Materiale, 8, 1962, 309-316.

Vulpe 1995 — A.Vulpe, *Cultura Costişa/The Costişa culture*. In: *Comori ale epocii bronzului din România/Treasures of the Bronze Age in Romania*, Bucharest, 1995, 163-164/165-166.

Zaharia 1987 — Eugenia Zaharia, *La culture Monteoru. L'étape des débuts à la lumière des fouilles de Sărata Monteoru*, Dacia, N.S., XXXI, 1987, 21.

Zaharia 1990 — Eugenia Zaharia, *Descoperiri ale culturii Monteoru în sud-estul Transilvaniei*, Thraco-Dacica, XI, 1-2, 1990, 33-37.

Zaharia 1990 a — Eugenia Zaharia, *La culture de Monteoru. Sa deuxième étape de développement à la lumière des fouilles de Sărata Monteoru (dép. de Buzău)*, Dacia, N.S., XXXIV, 23-51.

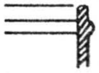
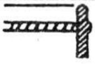
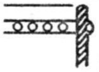
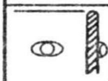
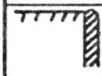
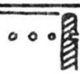
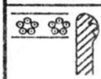
Zaharia 1991 — Eugenia Zaharia, *La culture de Monteoru. La IIIe étape MIc2. Les fouilles de Sărata-Monteoru (dép. de Buzău)*, Dacia, N.S., XXXV, 1991, 61-91.

Zaharia 1993 — Eugenia Zaharia, *La culture de Monteoru Les IVe-V^e étapes. Les fouilles de Sărata Monteoru*, Dacia, N.S., XXXVII, 1993, 15-38.

Zaharia 1995 — Eugenia Zaharia, *Cultura Ciomortan/The Ciomortan culture*. In: *Comori ale epocii bronzului din România/Treasures of the Bronze Age in Romania*, Bucharest, 1995, 152-153.

Zaharia 1995 a — Eugenia Zaharia, *Cultura Monteoru/The Monteoru culture*. In: *Comori ale epocii bronzului din România/Treasures of the Bronze Age in Romania*, Bucharest, 1995, 188-193/197-201.

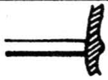
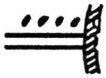
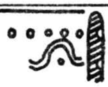
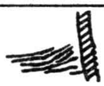
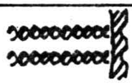
ZOLTAN, EBA, Complex No.1, Coarse pottery

	Decoration techniques	I						II	III	IV	V		VI	VII		VIII	-	Total
	Decoration Shapes	1	2	3	4	5	6	1	1	1	1	2	1	1	2	1	-	
I	 1	2																2
	 2		14					2				1						17
	 3			65			1	29					1					96
	 4				2			4										6
	 5					4		10										14
	 6						3	2				1						6
II	 1							1149	1	1		8	9	1	1			1170
III	 1								12									12
IV	 1									↑								↑
V	 1										6							6
	 2											27						27
VI	 1												50					50
VII	 1													↑				↑
	 2														↑			↑
VIII	 1															2		2
	Decorated																	1409
	Undecorated																1799	1799
	Total	2	14	65	2	4	4	1196	13	1	6	37	60	1	1	2	1799	3208

I - Plastic; II - "Besenstrich"; III - "Textilmuster"; IV - Painting; V - nail impression; VI - finger impression; VII - pricking; VIII - grooving

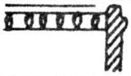
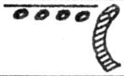
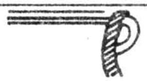
Tab. 1. Statistics and associations of differnt kinds of ornaments on coarse pottery.

ZOLTAN, EBA, Complex No.1, Semifine pottery

Decoration Shapes	Techniques of decoration						Number
	plastic	prick	grooving	incision	besenstrich	cord impression	
	+						1
	+	+					1
		+	+				1
			+				1
			+				4
			+				2
			+				1
		+		+			1
				+			3
					+		9
					+		1
					+		1
						+	1
Total decorated :							27
Total undecorated :							717
Total semifine pottery :							744

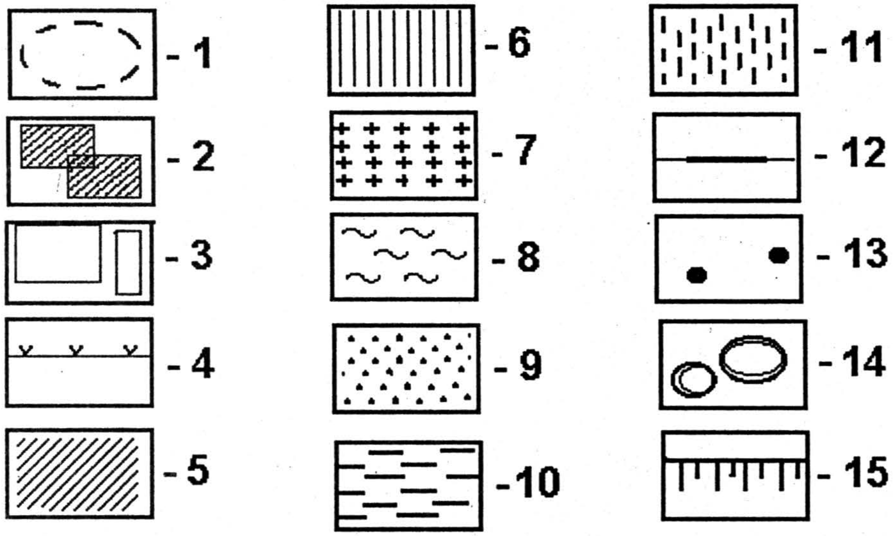
Tab. 2. Statistics and associations of differnt kinds of ornaments on semifine pottery.

ZOLTAN, EBA, Complex No.1, Fine pottery

Decoration Shapes	Techniques of decoration					Number
	plastic	prick	grooving	incision	impression	
	+					1
	+	+				1
		+				1
		+				1
		+				1
		+				1
		+				1
		+		+		1
		+		+		1
					+	1
				+	+	1
			+			1
			+			1
			+			1
Total decorated :						14
Total undecorated :						377
Total fine pottery :						391

Tab. 3. Statistics and associations of differnt kinds of ornaments on fine pottery.

Legend:



1 Surface of the EBA settlement;
2 trenches excavated by Szekely Zoltan in 1971-1972;
3 trenches excavated in 1996-1997;
4 modern surface;
5 ploughing soil; containing artefacts from the Aeneolithic, Bronze Age and XIXth century;
6 alluvial soil containing artefacts from the Aeneolithic, Bronze Age and XIXth century;
7 level belonging to the latest Noua culture horizon;
8 ashy soil belonging to the Noua culture;
9 mass of the Wietenberg culture artefacts;
10 level belonging to the Middle Bronze Age;
11 filling of the EBA complex (No. 1), gray sandy soil;
12 remnants of the fireplaces;
13 pillar and stake pits;
14 stone boulders;
15 sterile s oil (yellow sandy soil).

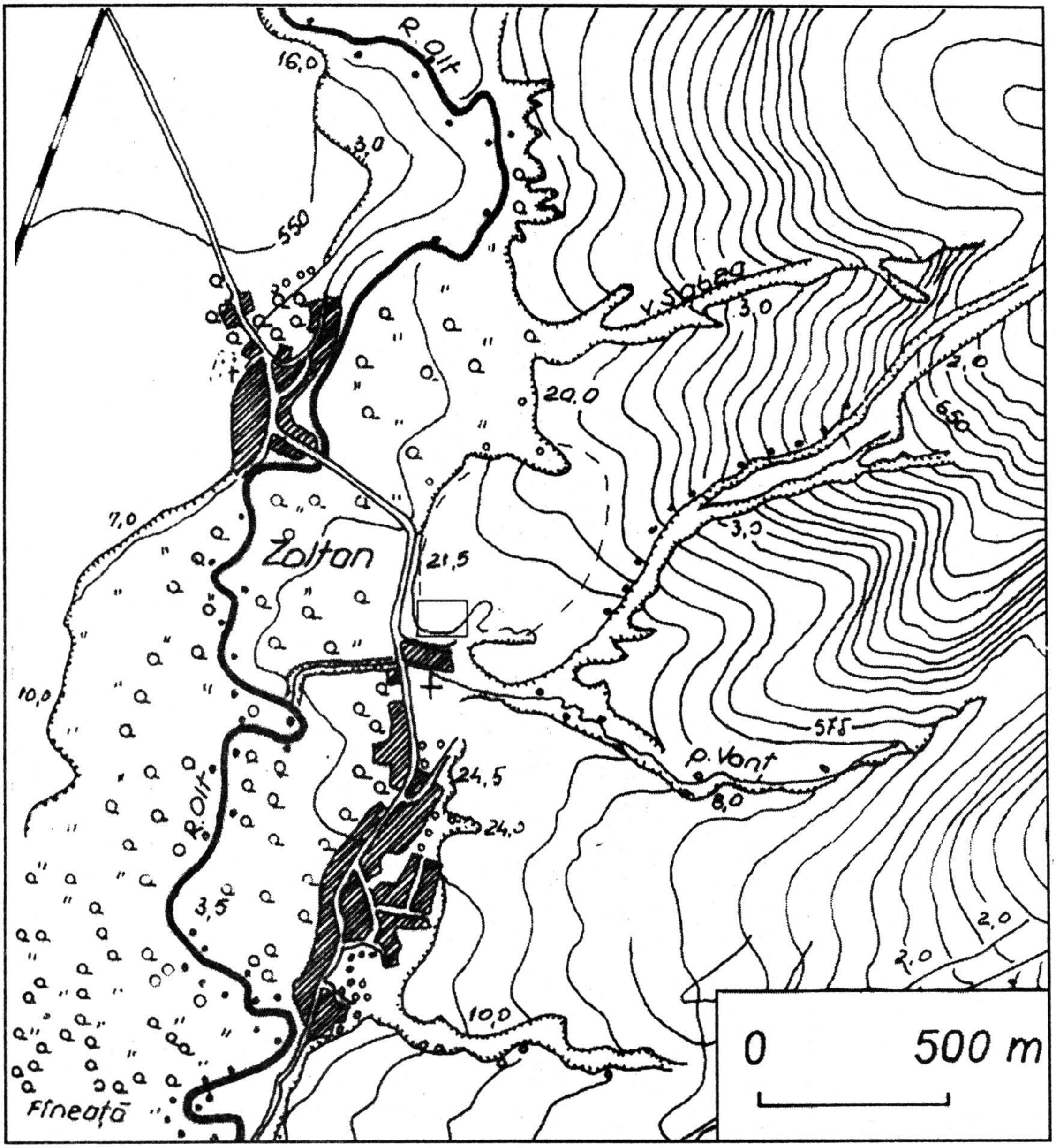


Fig. 1. Zoltan. The topographical situation of the settlement.

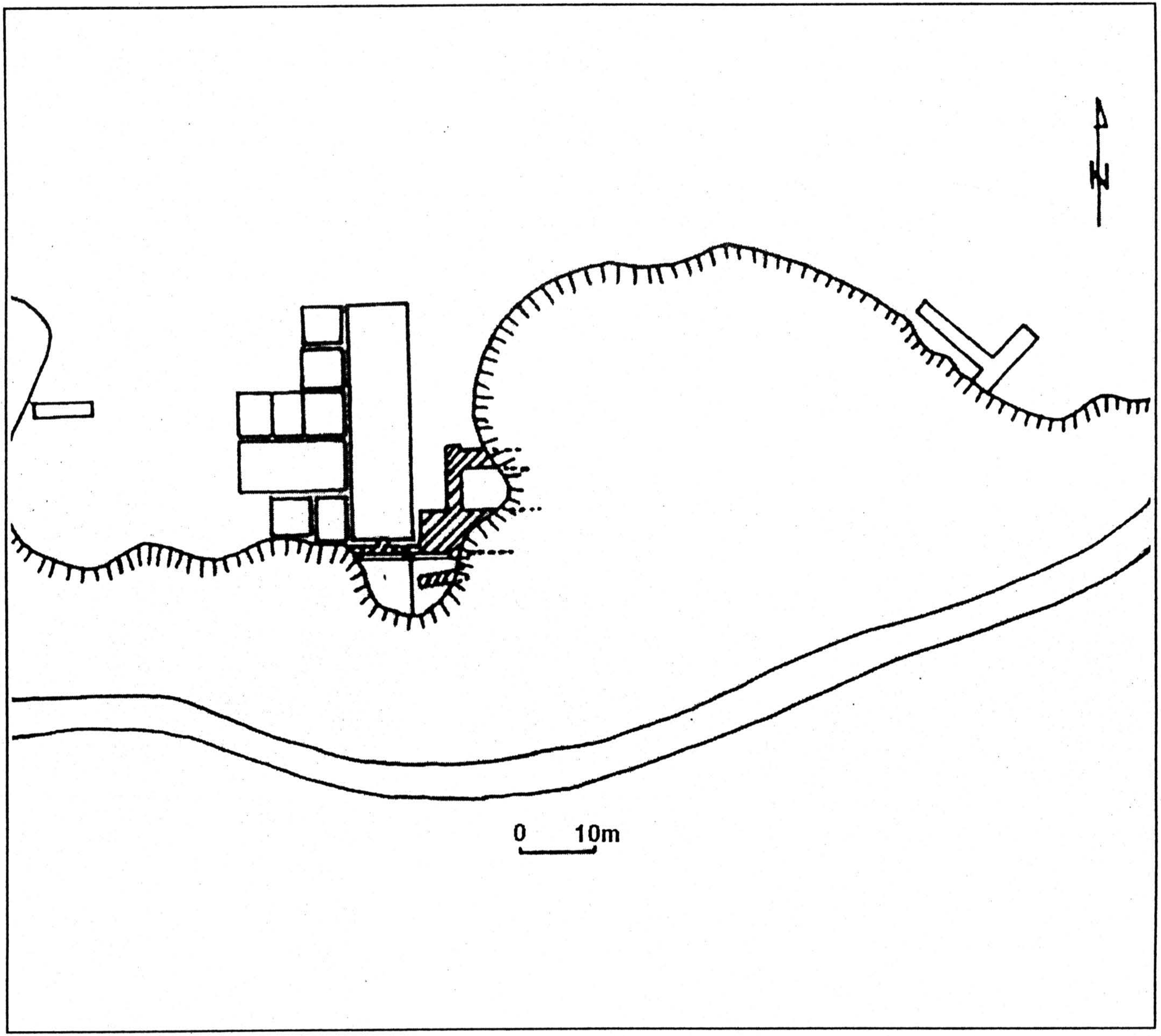


Fig. 2. Zoltan. The general plan of the excavation.

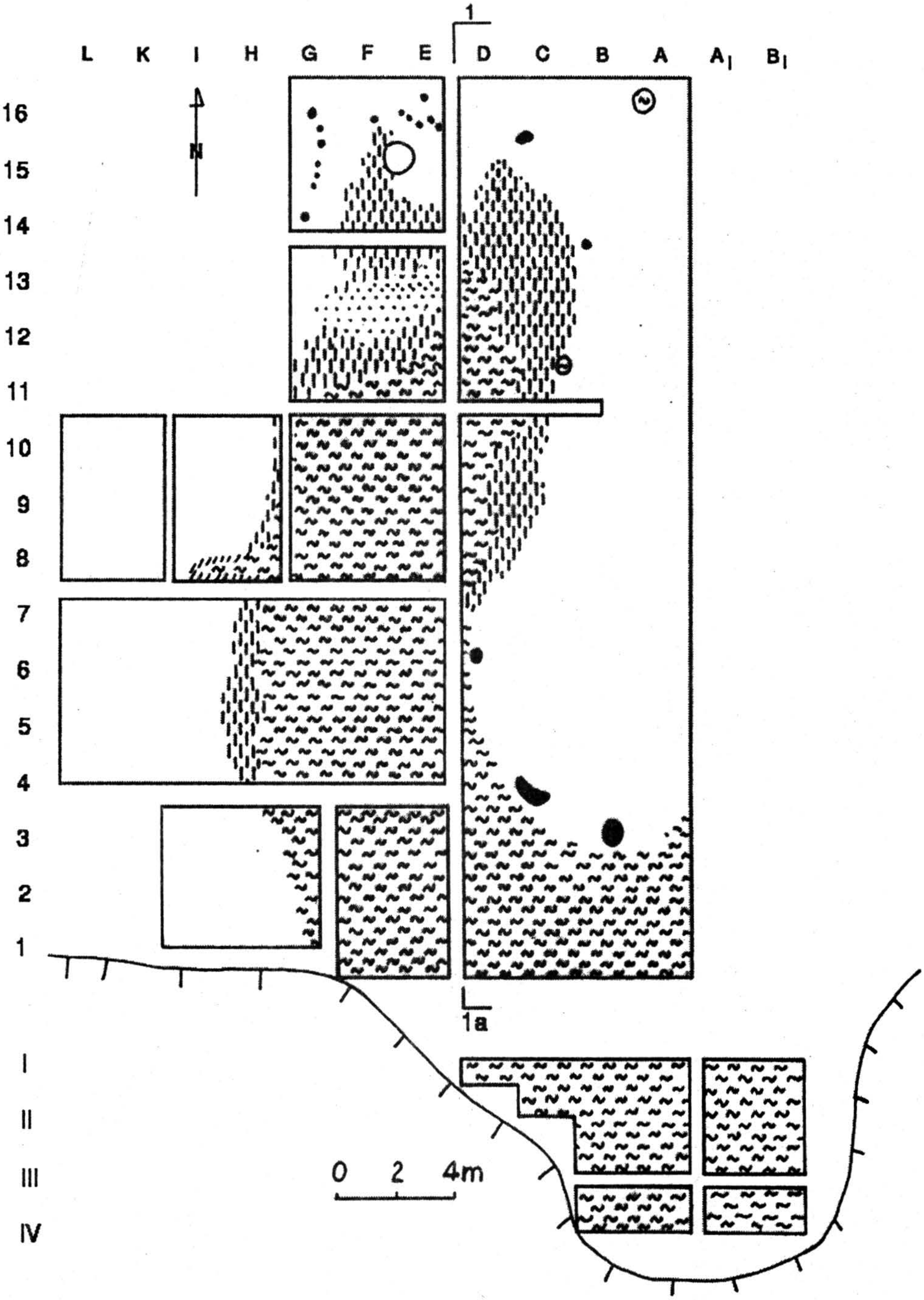


Fig. 3a. Zoltan. The plan of the trench B: immediately under the cultural level.

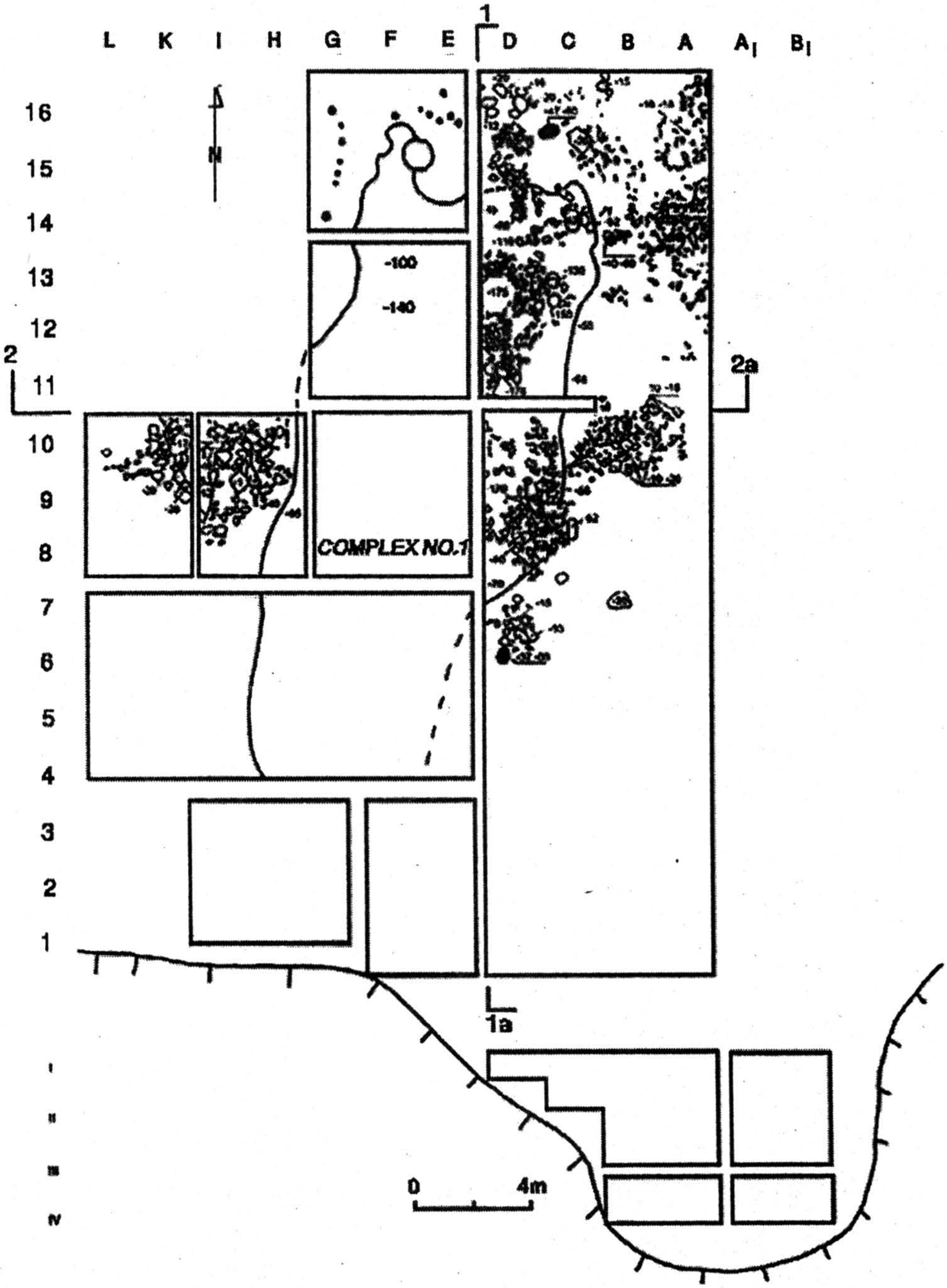


Fig. 3b. Zoltan. The plan of the trench B: complex No. 1.

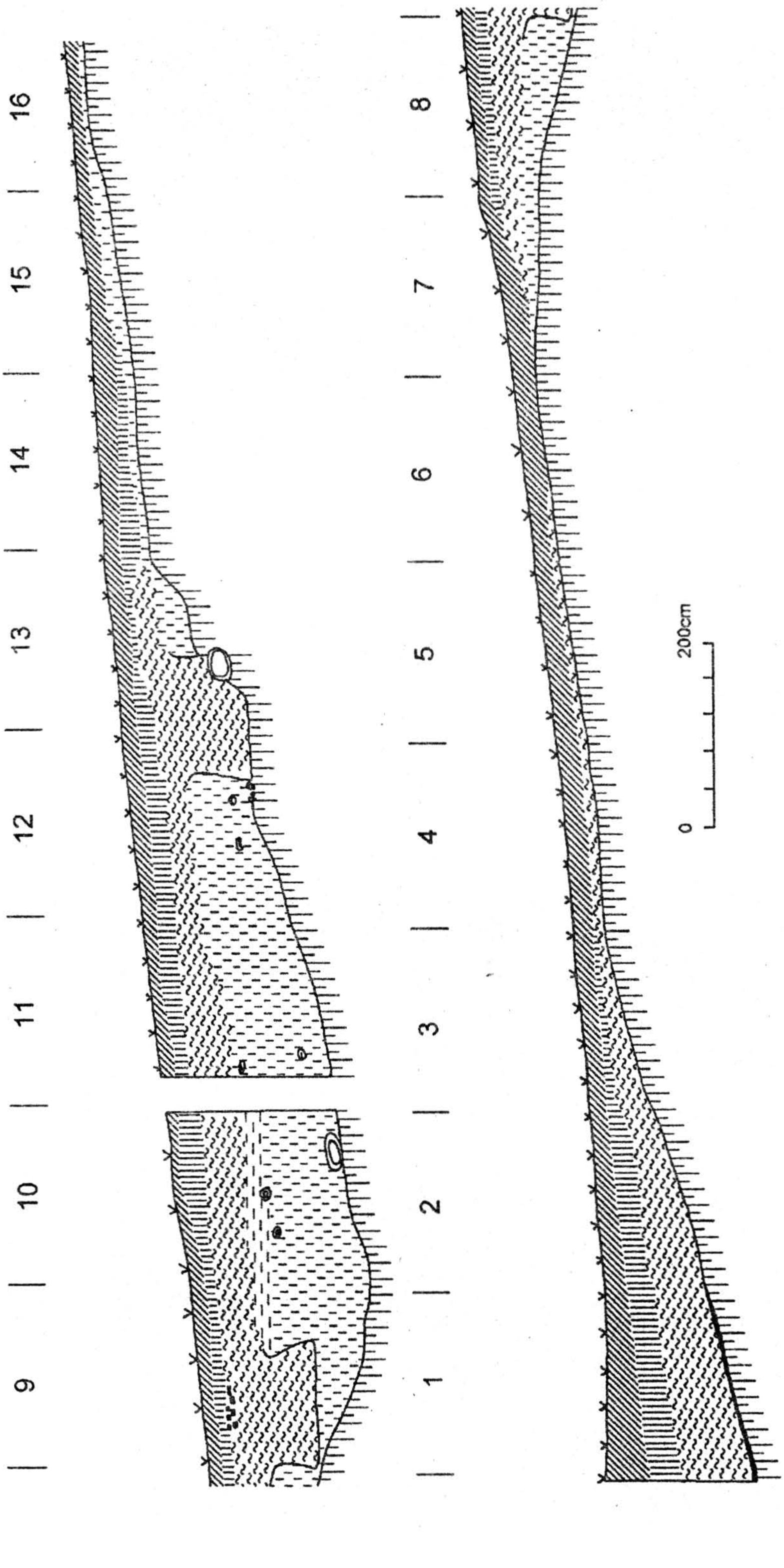


Fig. 4. Zoltan. Stratigraphic sections: A. the eastern view of the section D/E, 1-16 (1a-1);

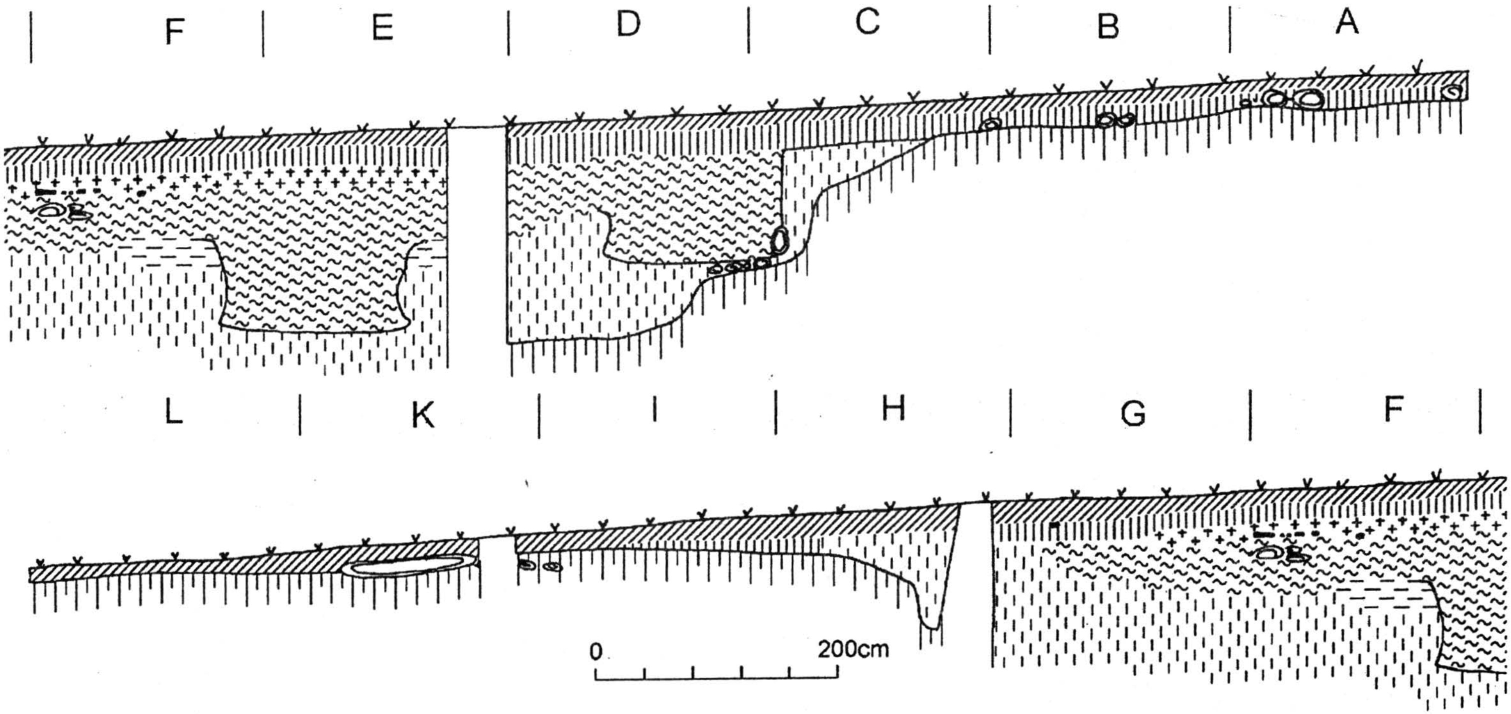


Fig. 4. Zoltan. Stratigraphic sections: B. the southern view of the section 8/7, E-I; 3 the southern view of the section 10/11, A-L (2a-2).

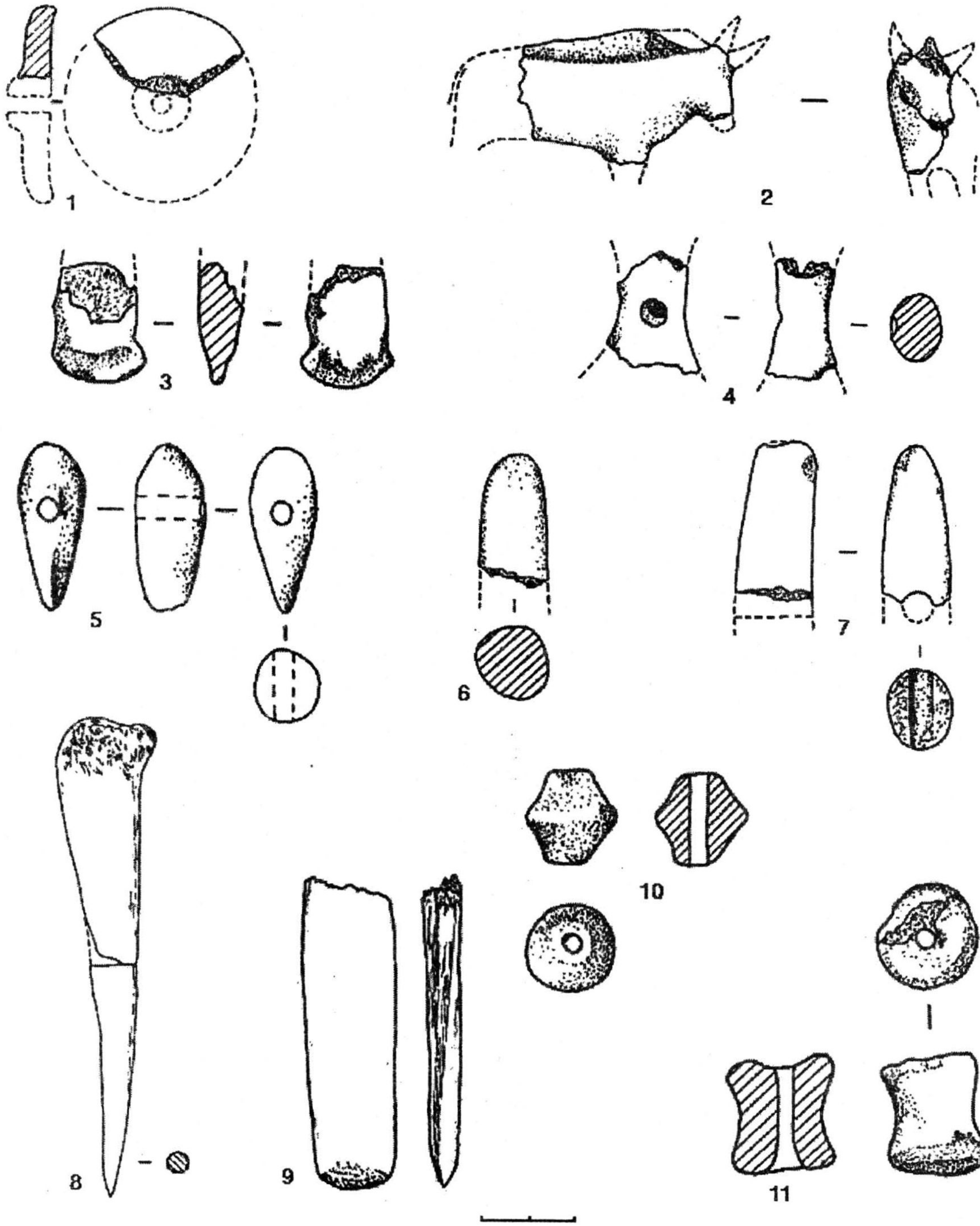


Fig. 5. Zoltan. EBA cult pieces (1-7) and tools (8-11). 1-7, 10-11 burnt clay; 8-9 bone. 1-4, 6-11 complex No. 1; 5 cultural layer, above the complex No. 1.

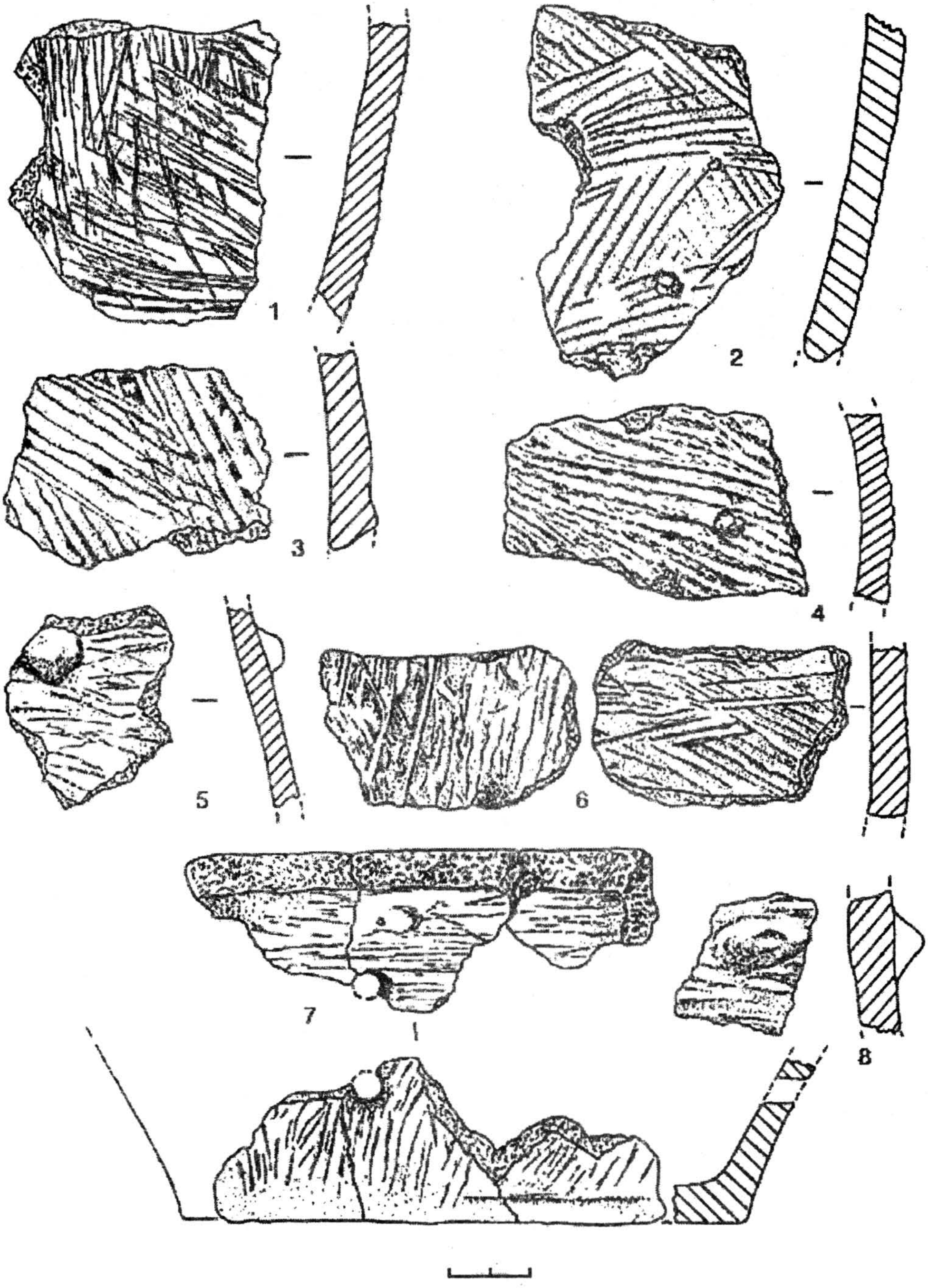


Fig. 6. Zoltan. EBA complex No. 1. Coarse pottery.

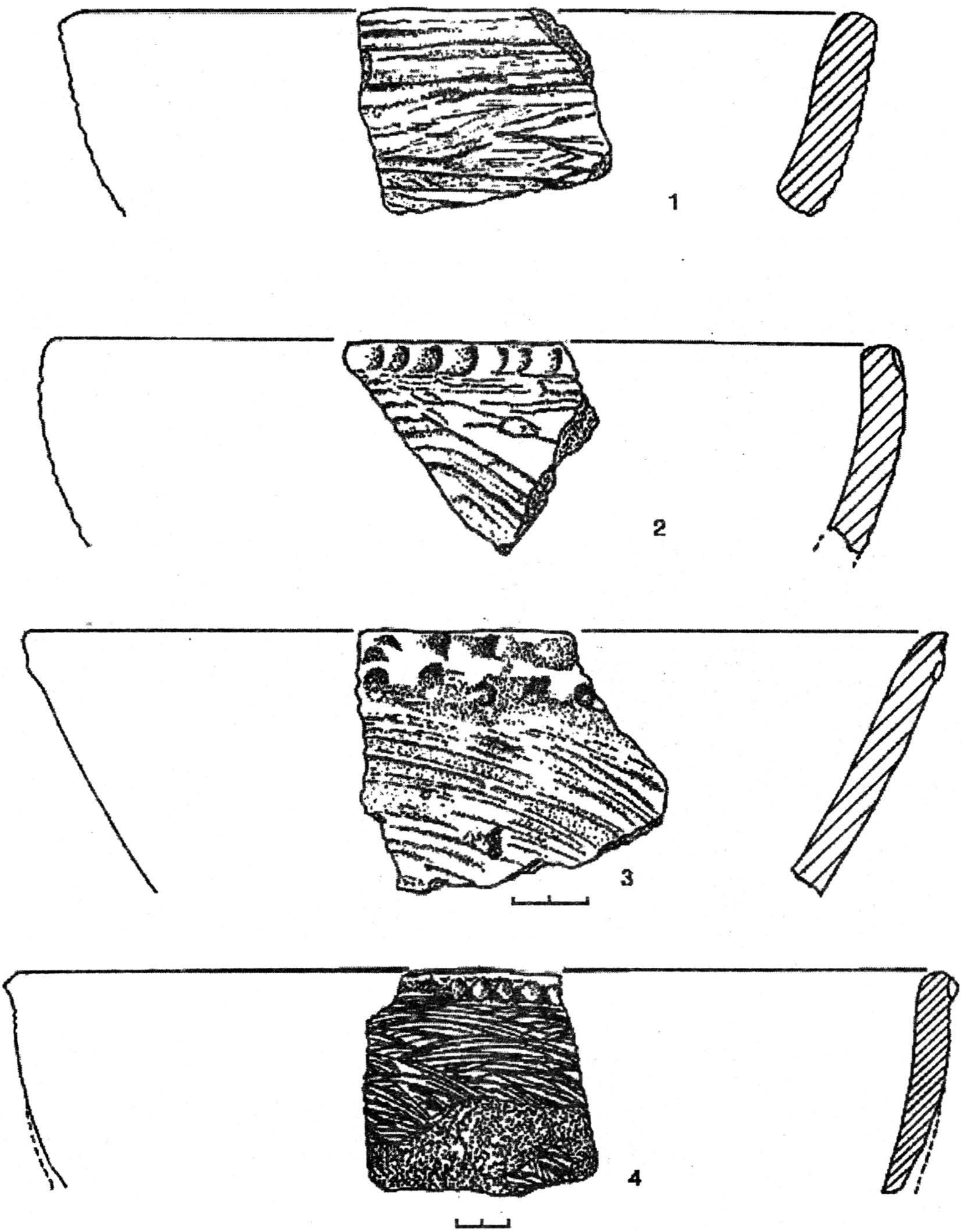


Fig. 7. Zoltan. EBA complex No. 1. Coarse pottery.

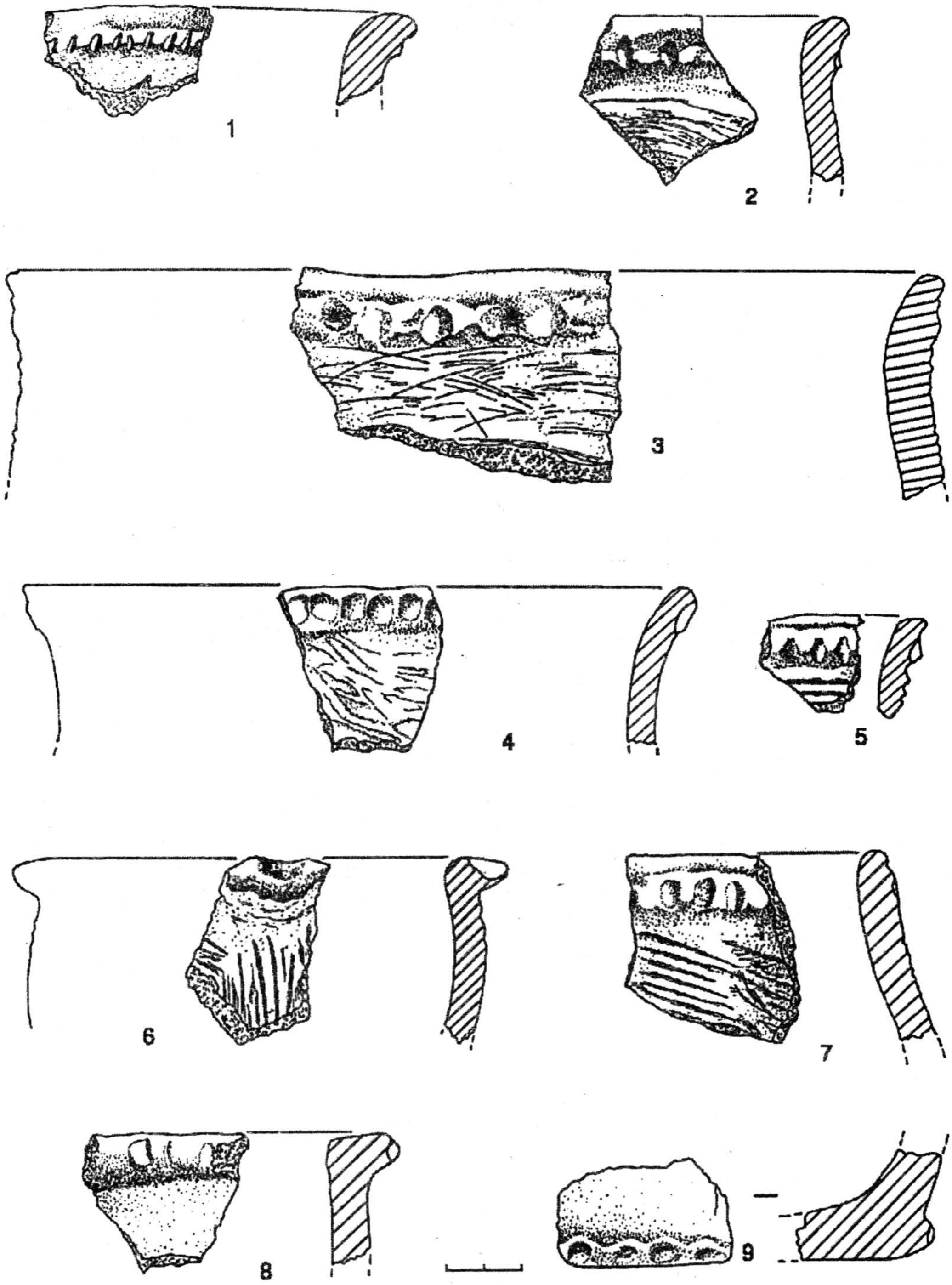


Fig. 8. Zoltan. EBA complex No. 1. Coarse pottery.

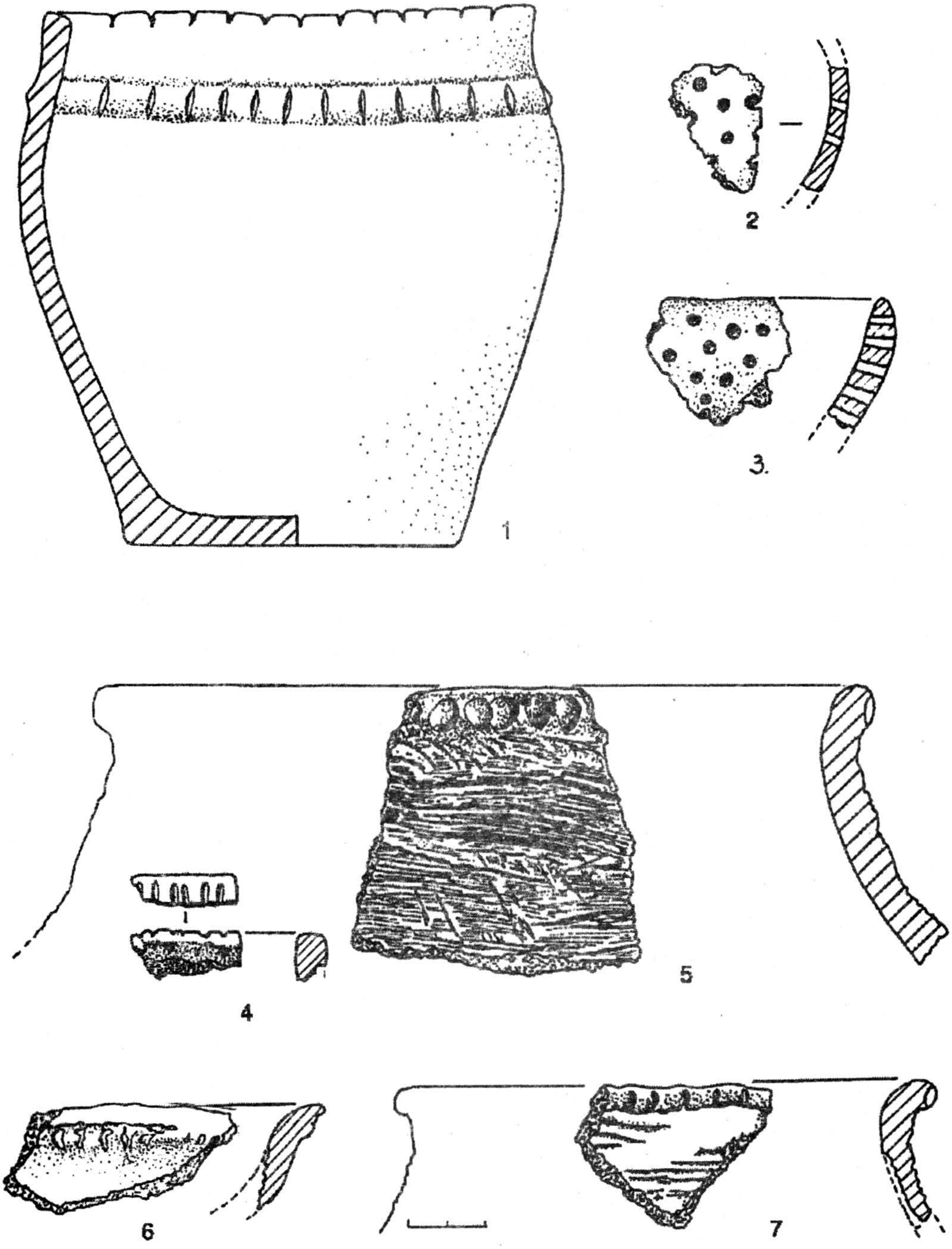


Fig. 9. Zoltan. EBA complex No. 1. Coarse pottery.

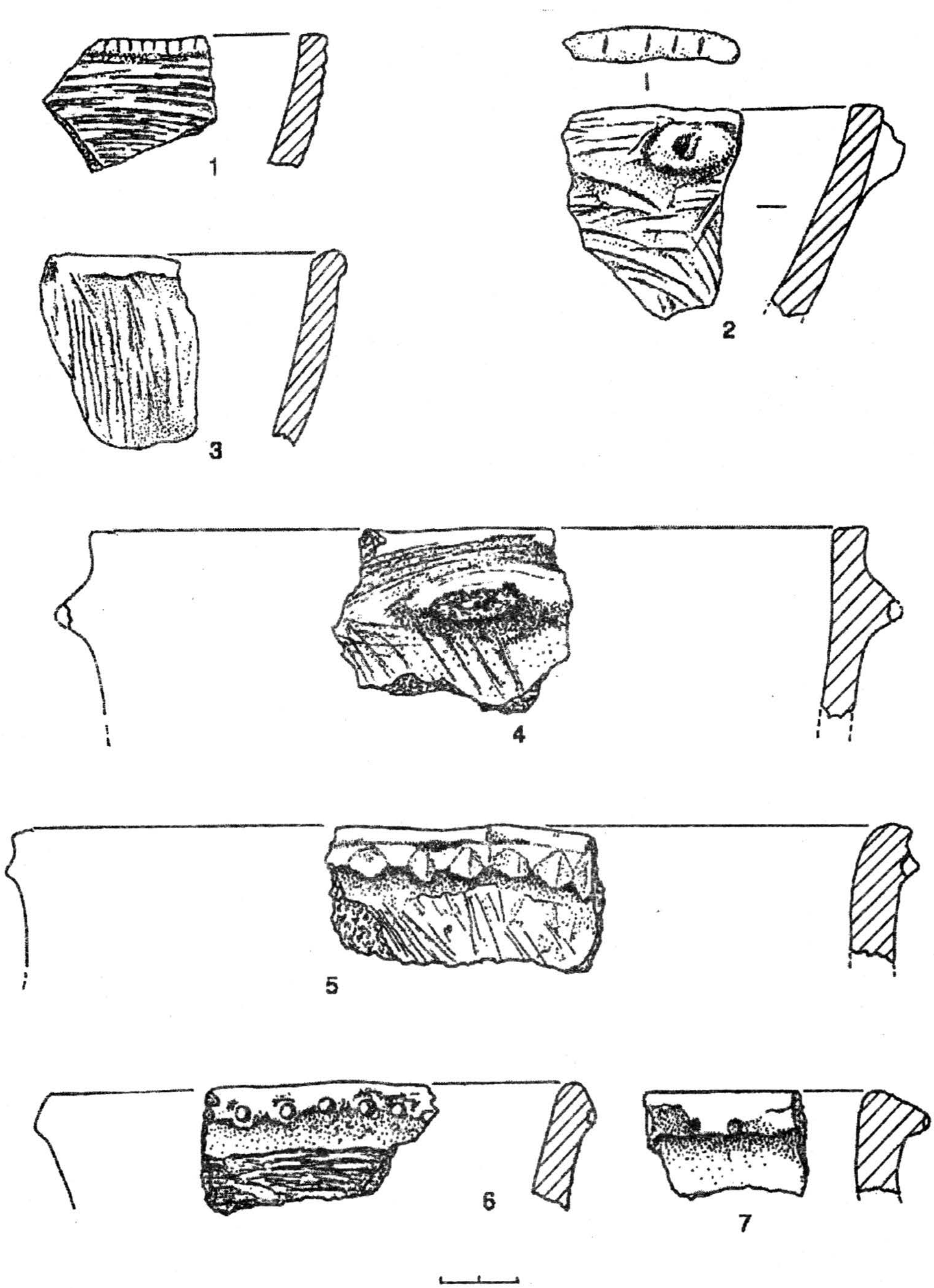


Fig. 10. Zoltan. EBA complex No. 1. Coarse pottery.

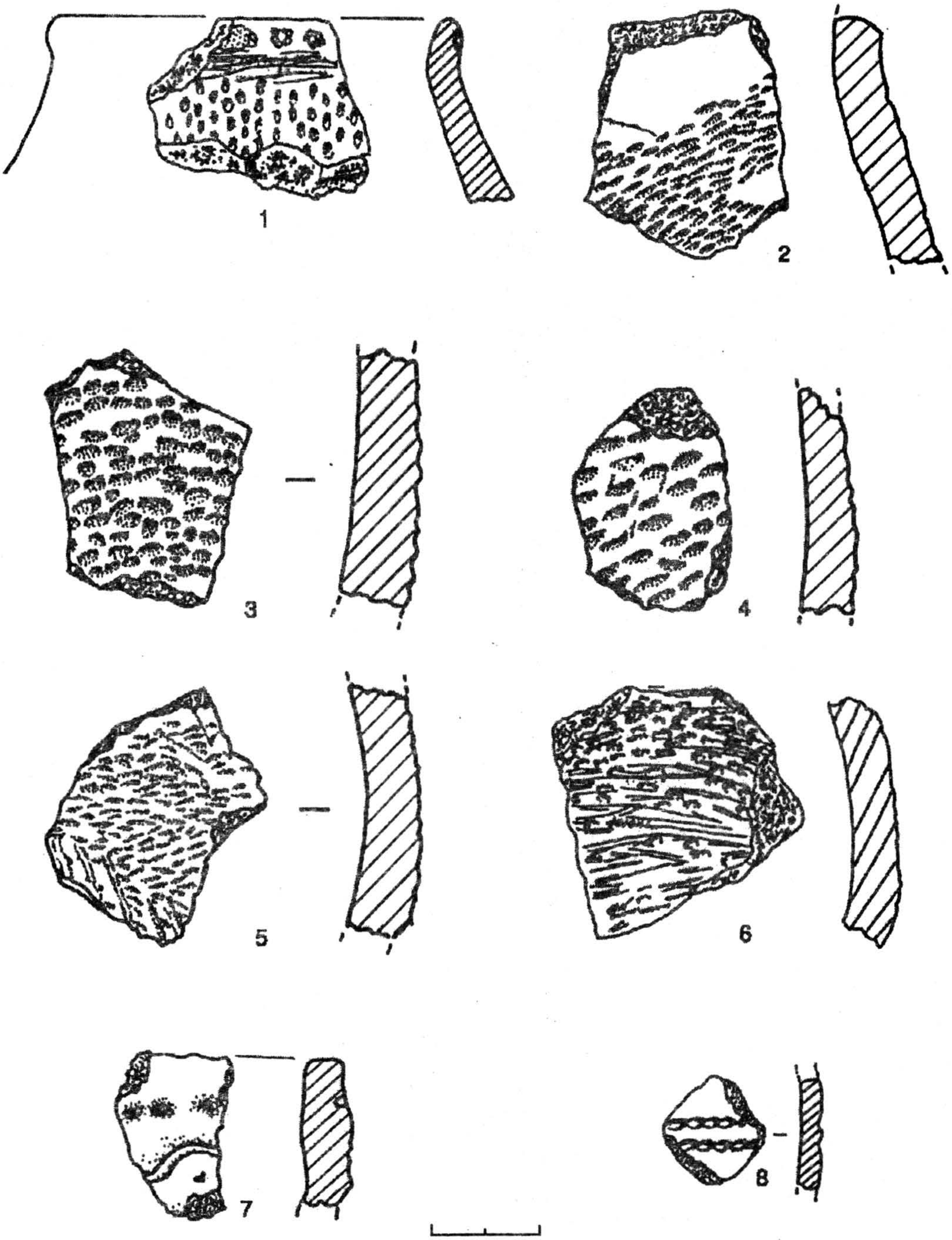


Fig. 11. Zoltan. EBA complex No. 1. Coarse (1, 3-6) and semifine (2, 7-8) decorated pottery.

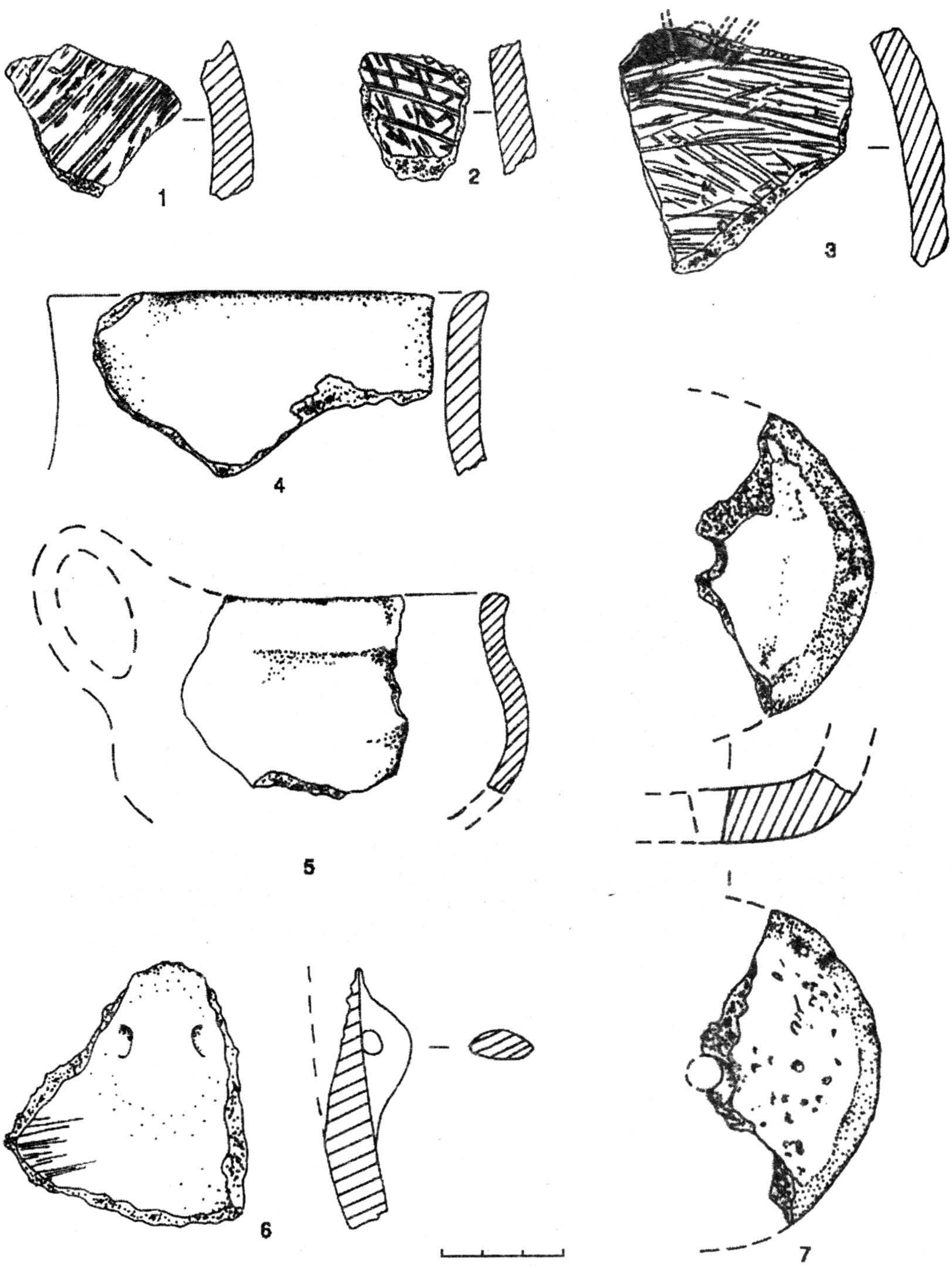


Fig. 12. Zoltan. EBA complex No. 1. Semifine (1-2), coarse (3,6) and fine (4-5, 7) pottery. 3 potsherd with *Besenstrich* and painted ornament.

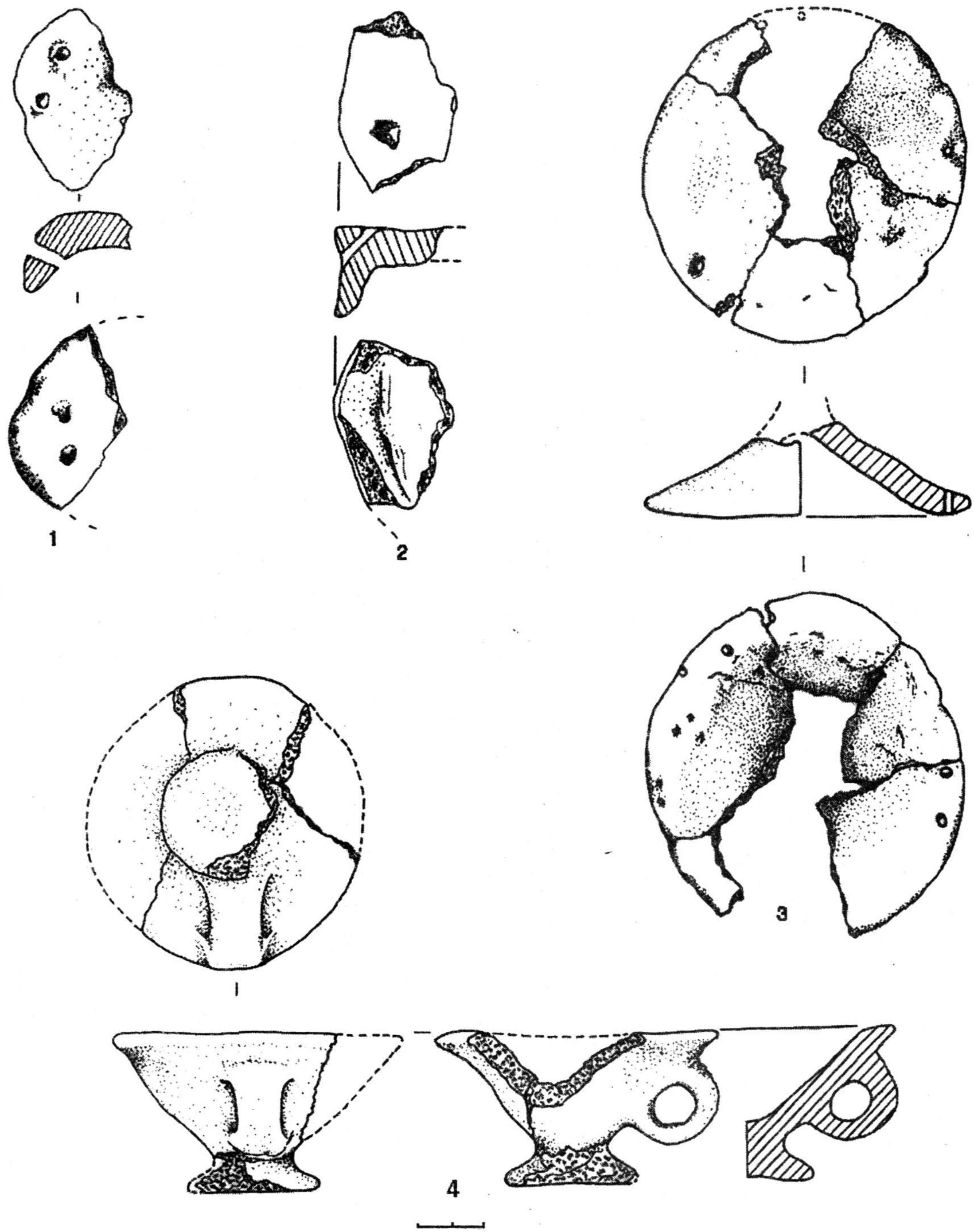


Fig. 13. Zoltan. EBA complex No. 1. Semifine pottery. Lids.

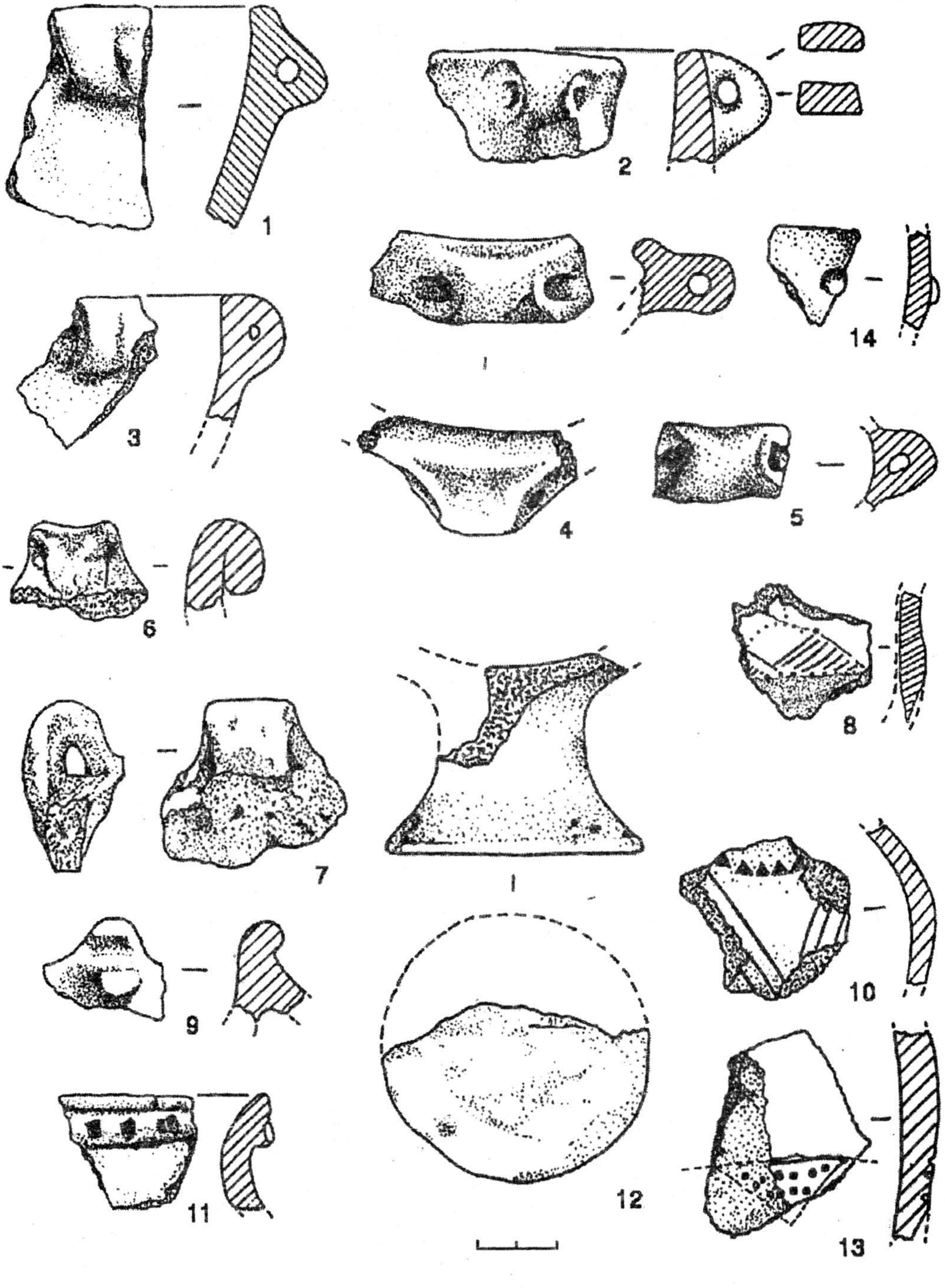


Fig. 14. Zoltan. EBA complex No. 1. Fine pottery.

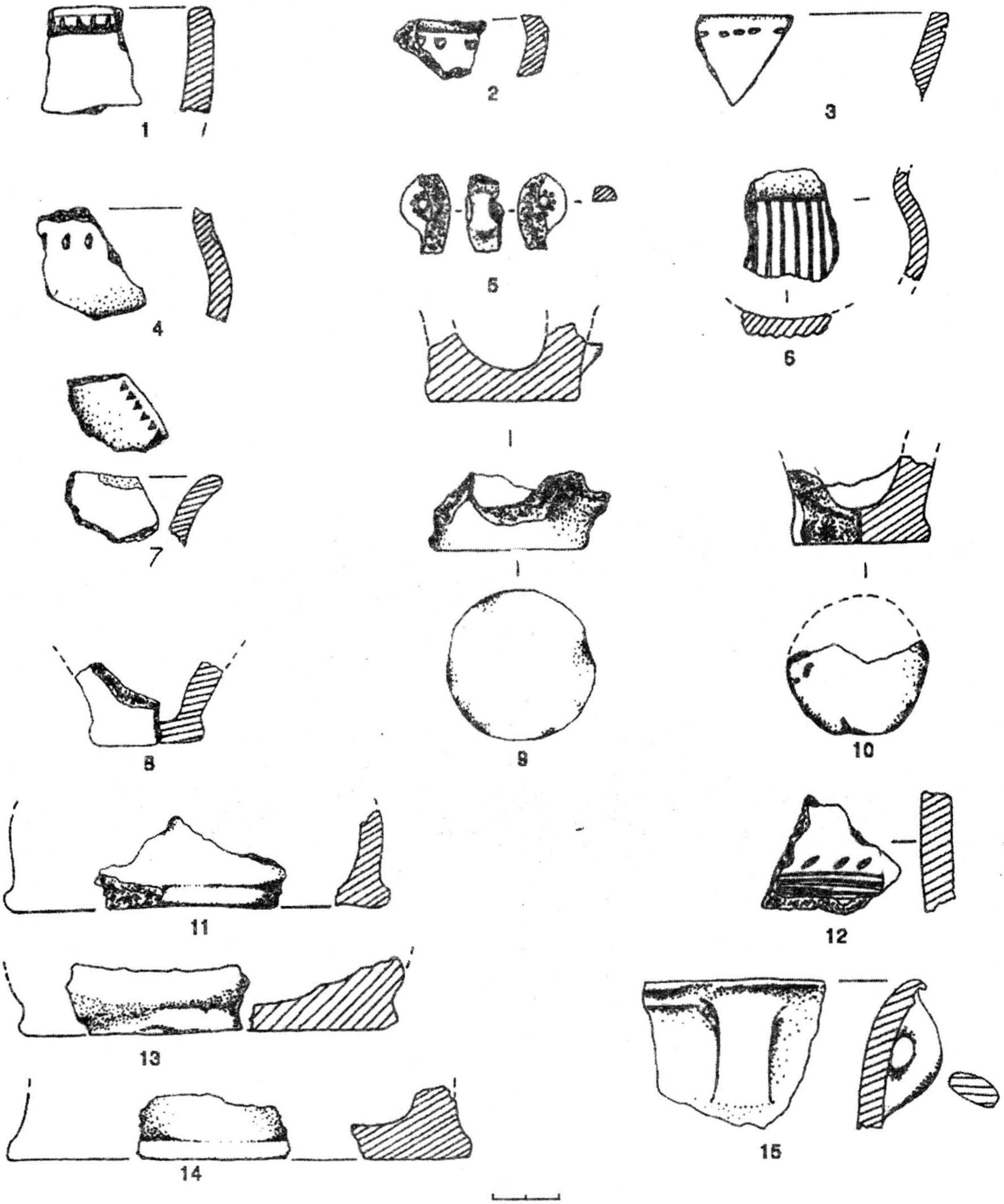


Fig. 15. Zoltan. EBA complex No. 1. Fine pottery.

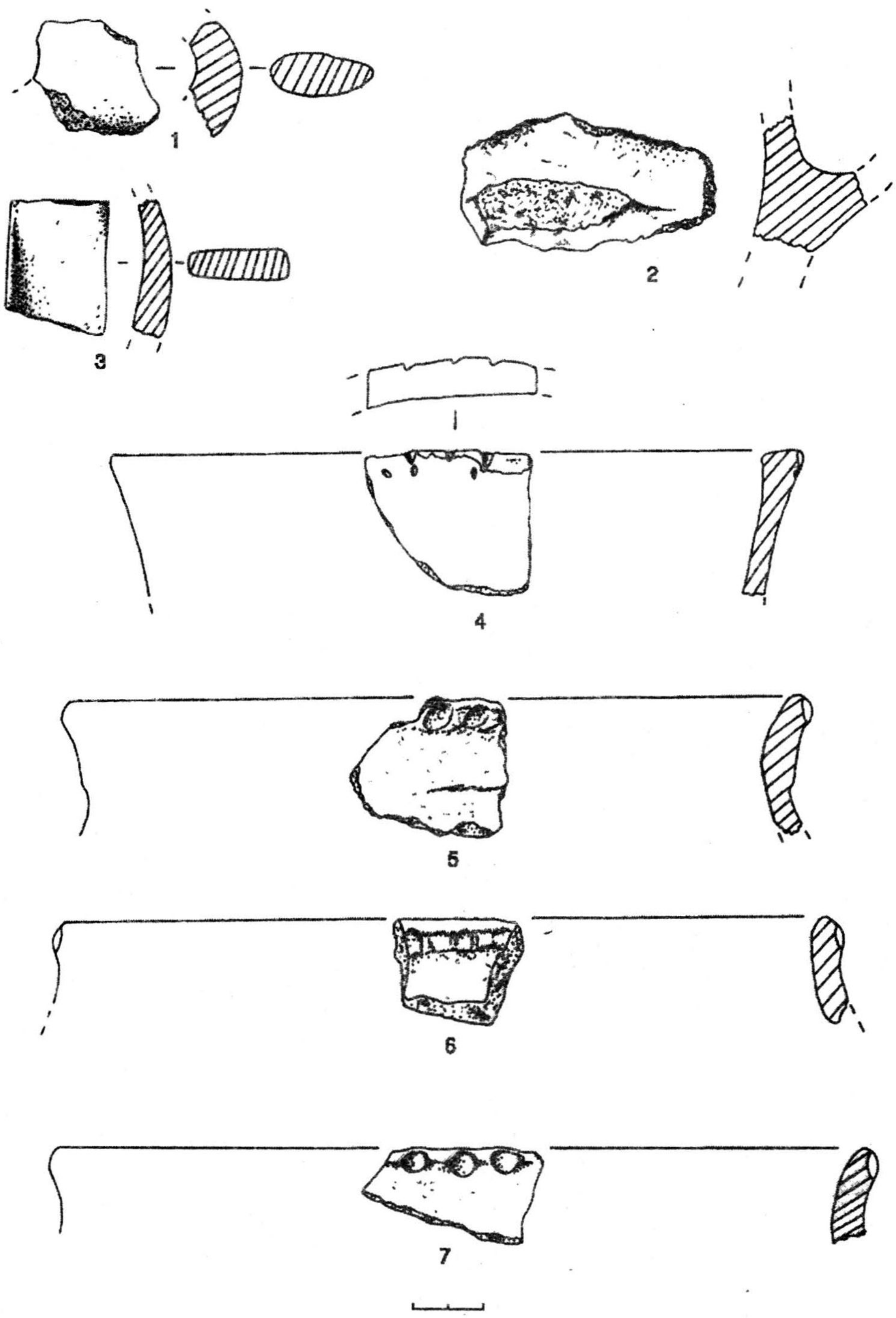


Fig. 16. Zoltan. Aeneolithic (?) pottery with pounded shell in the fabric from the upper part of the filling of the complex No. 1.

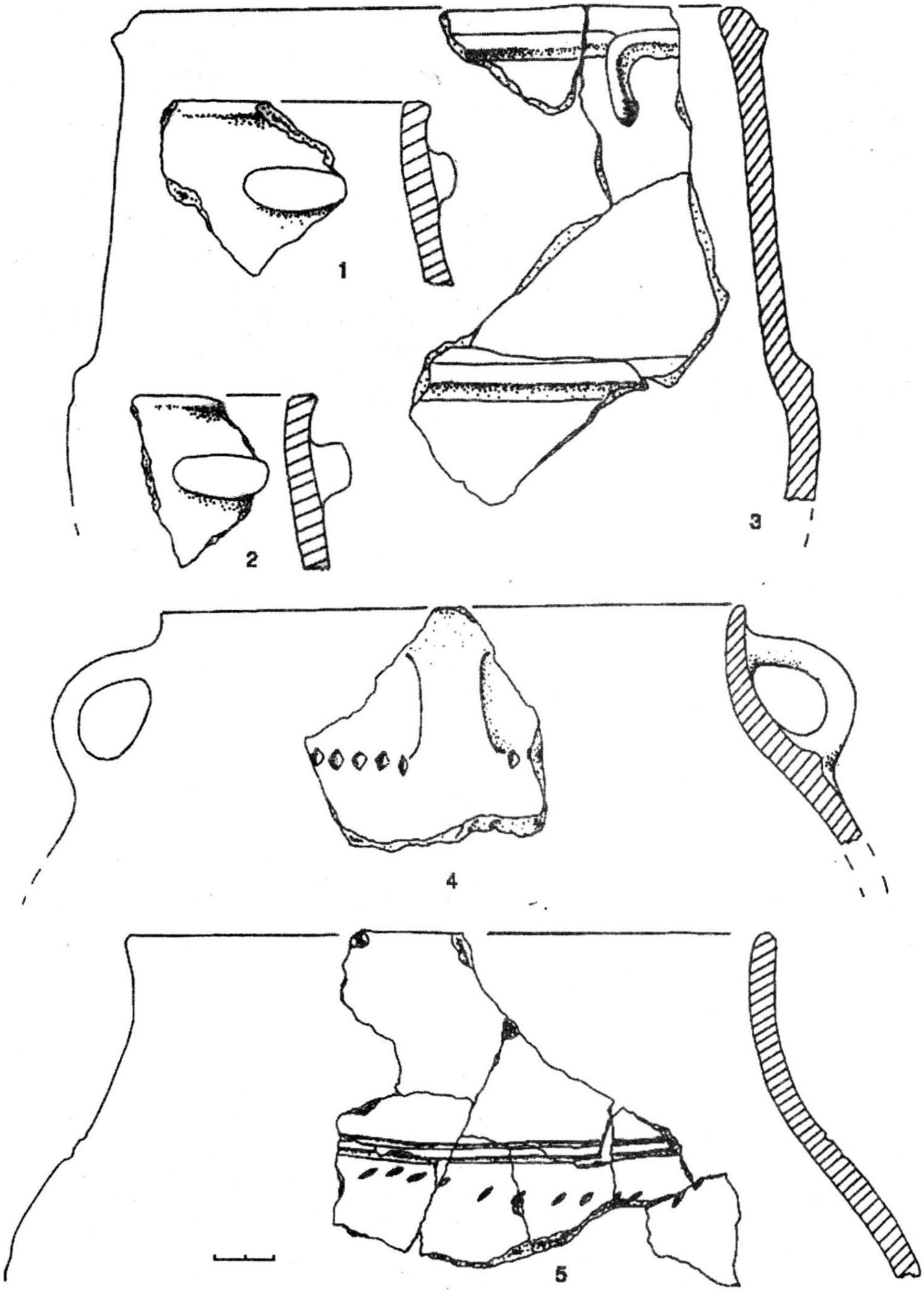


Fig. 17. Zoltan. Layer directly covering the complex No. 1. Early MBA (?) pottery.

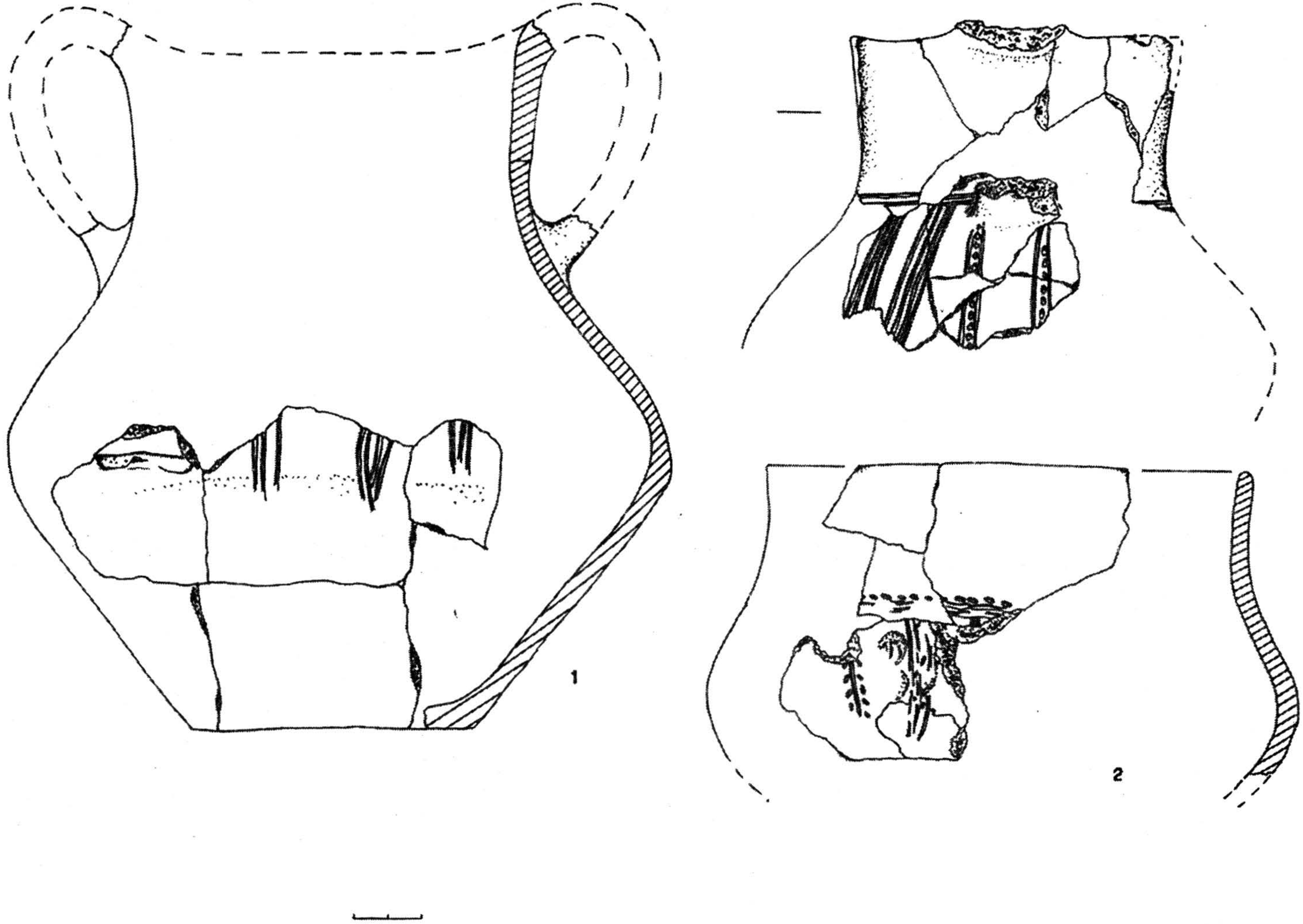


Fig. 18. Zoltan. Layer directly covering the complex No. 1. Early MBA (?) pottery.

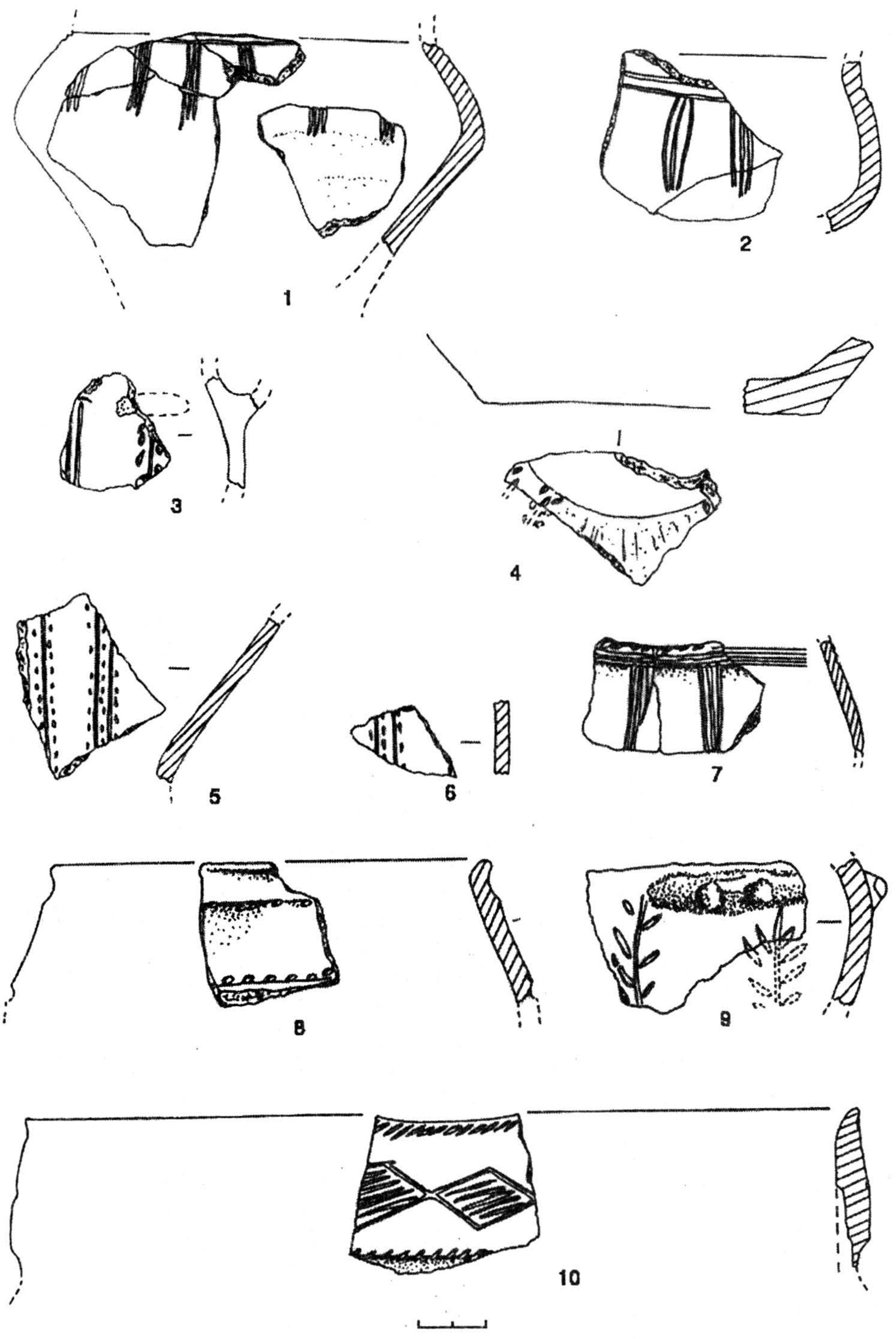


Fig. 19. Zoltan. Layer directly covering the complex No. 1. Early MBA (?) pottery.

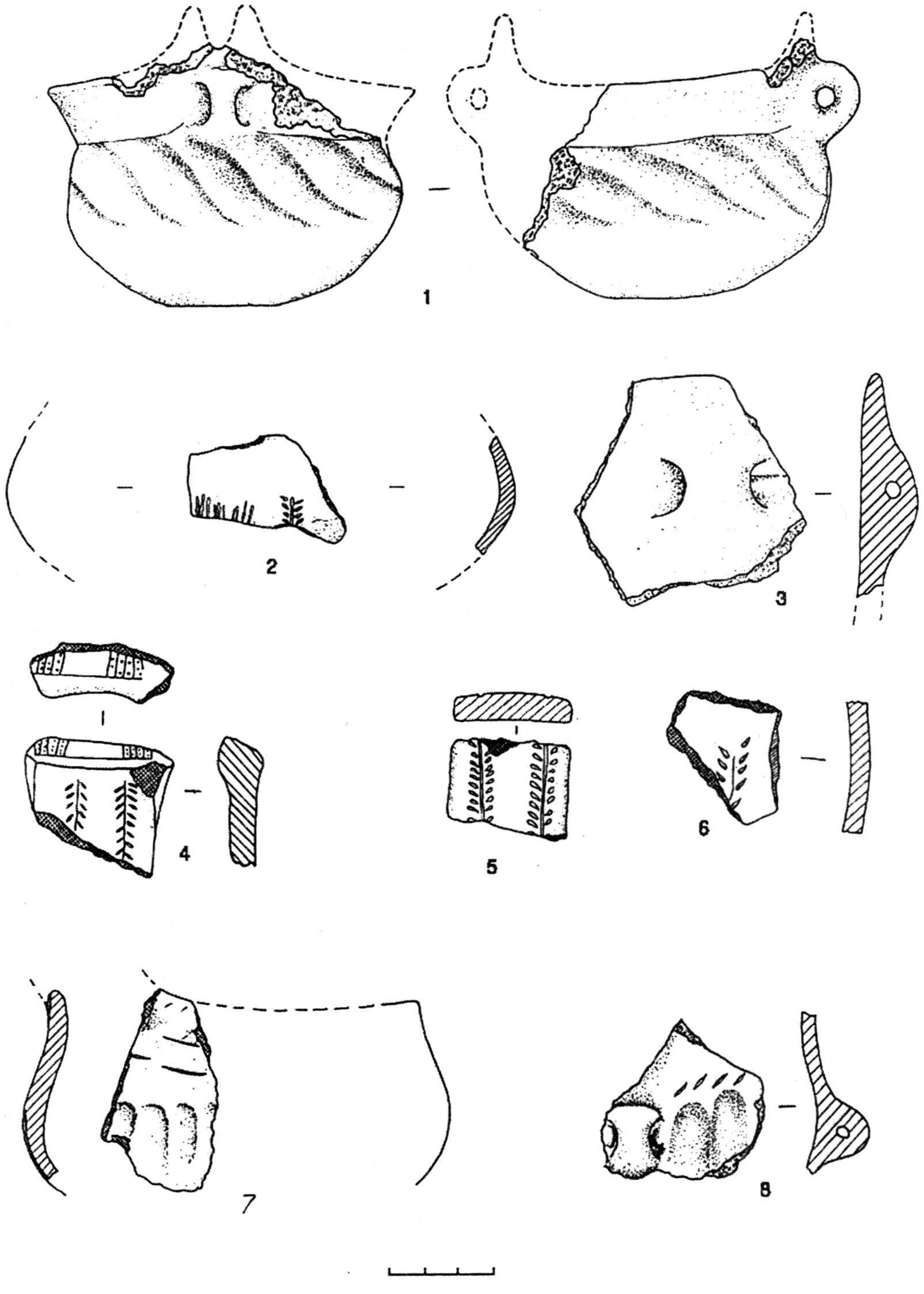
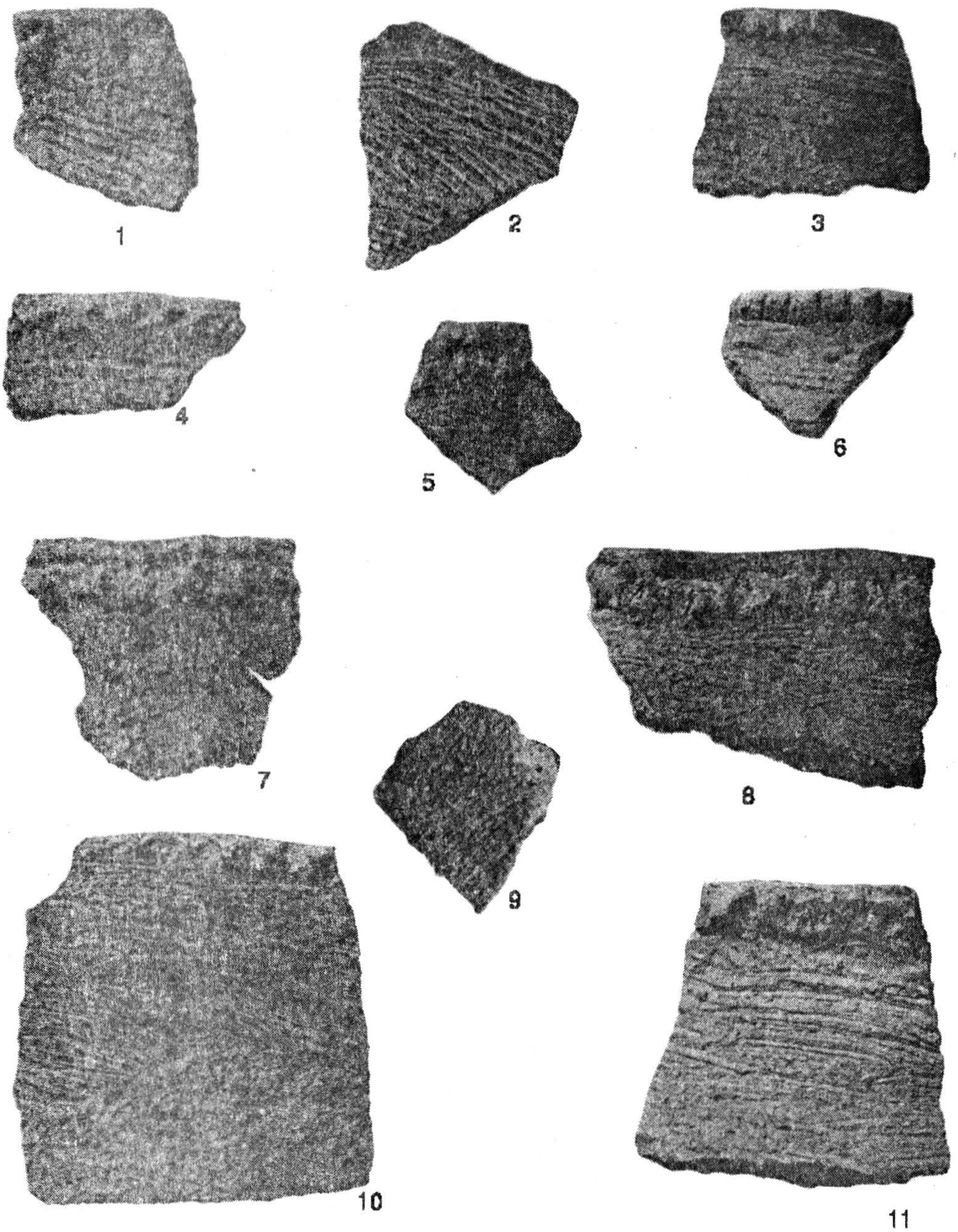
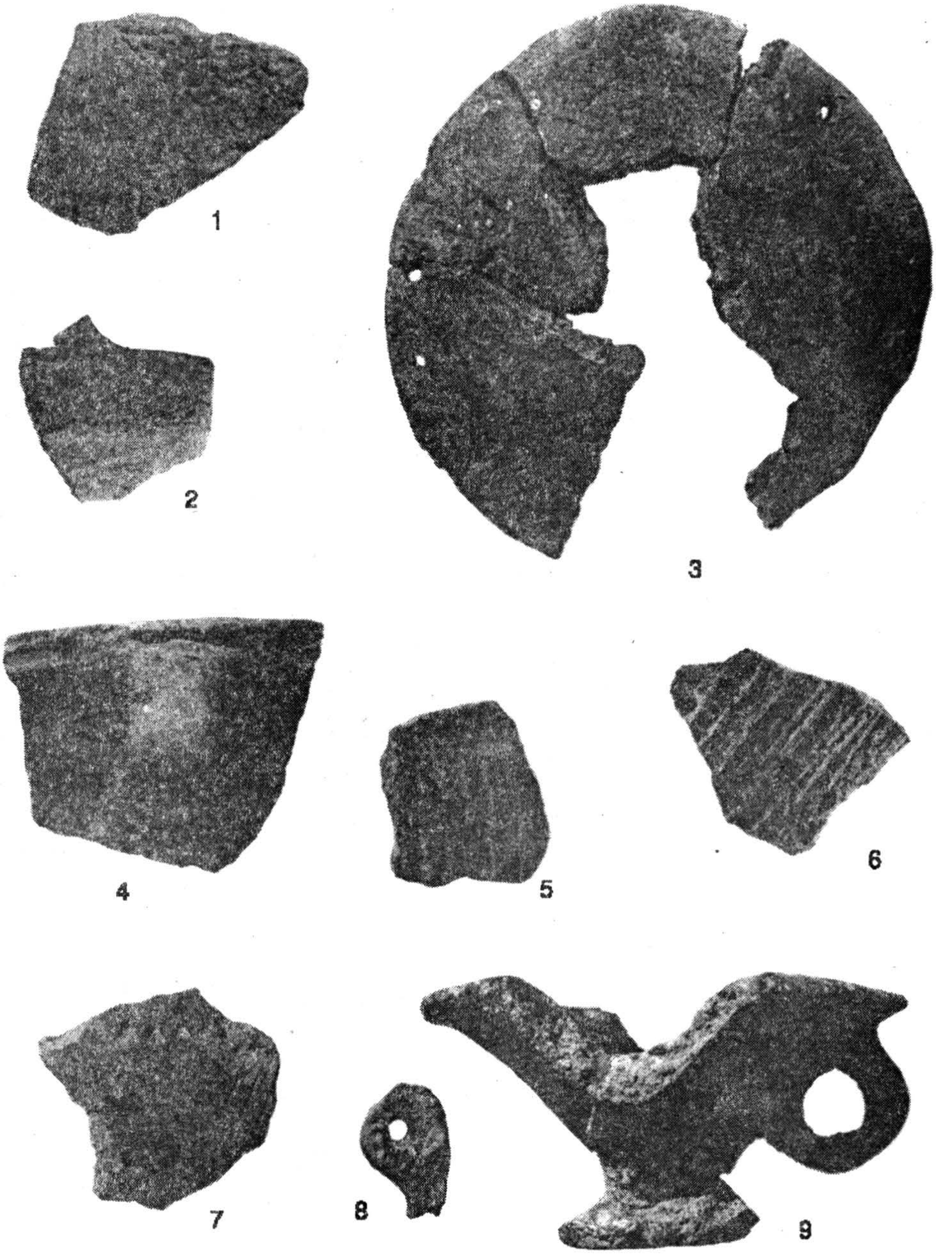


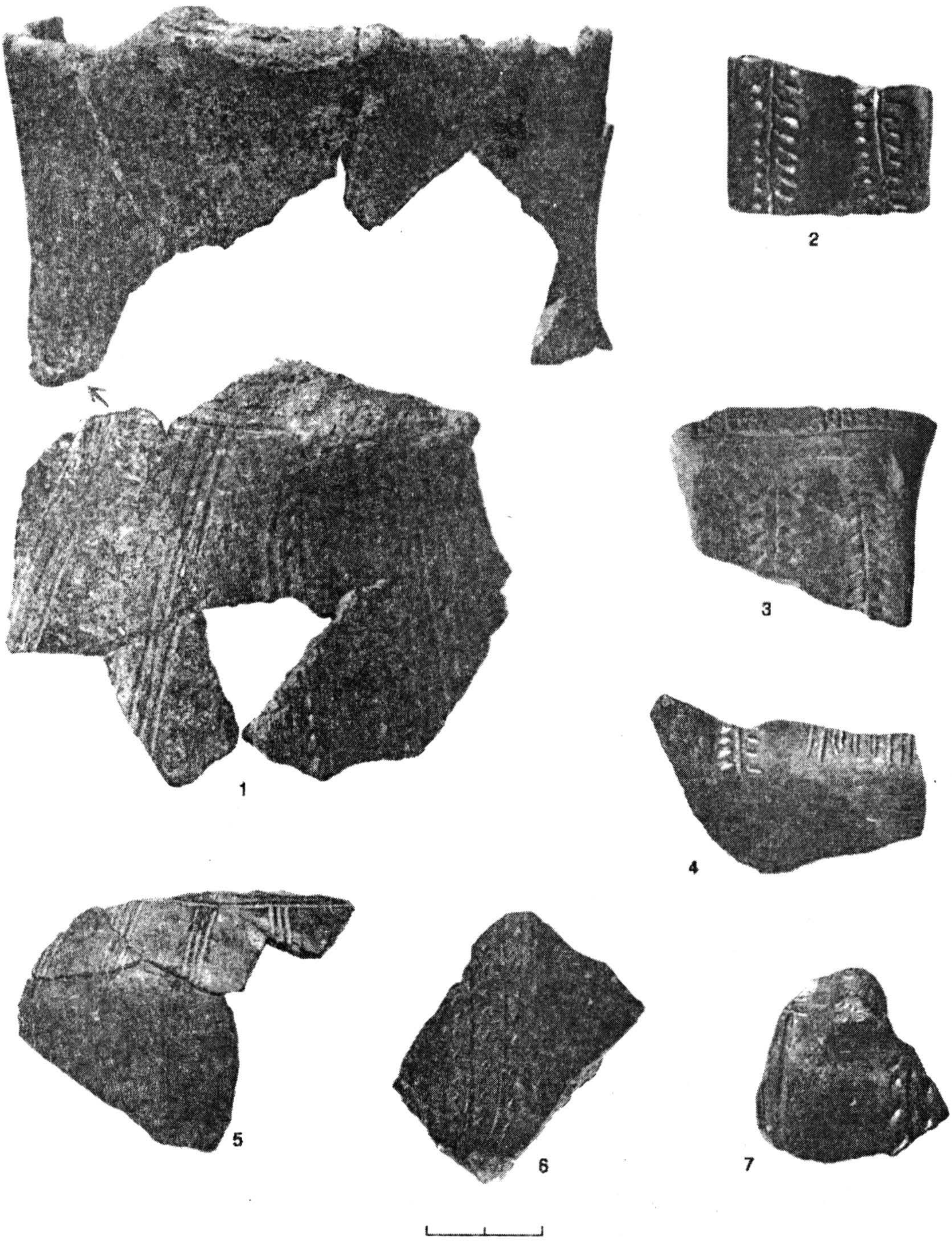
Fig. 20. Zoltan. Layer directly covering the Complex No. 1. Early MBA (?) pottery.



Pl. 1. Zoltan. EBA complex No. 1. Coarse pottery.



Pl. 2. Zoltan. EBA complex No. 1. Semifine (3, 6, 9) and fine (1-2, 4-5, 7-8) pottery.



Pl. 3. Zoltan. Early MBA (?). Semifine (1) and fine (2-7) pottery.